

aiwa

DVD STEREO SYSTEM
SISTEMA ESTEREO DVD
CHAINE STEREO AVEC LECTEUR DE DVD

HT-DV90

OPERATING INSTRUCTIONS
MANUAL DE INSTRUCCIONES
MODE D'EMPLOI

En (English)

E (Español)

F (Français)

For assistance and information

call toll free 1-800-BUY-AIWA

(United States and Puerto Rico)

8B-AX2-903-11
011201BCK-U-AN

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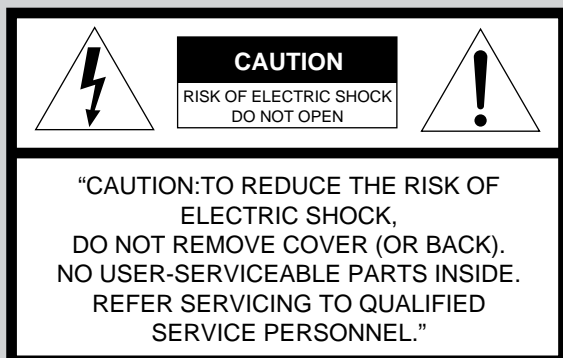
DIGITAL
dts
SURROUND

COMPACT
disc
DIGITAL AUDIO

DVD
VIDEO™

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



Explanation of Graphical Symbols:



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Owner's record

For your convenience, record the model number and serial number (you will find them on the rear of your set) in the space provided below. Please refer to them when you contact your Aiwa dealer in case of difficulty.

Model No.	Serial No. (Lot No.)
HT-DV90	
SX-F90	
SX-R90	
SX-C90	
TS-W90	

PRECAUTIONS

Read the Operating Instructions carefully and completely before operating the unit. Be sure to keep the Operating Instructions for future reference. All warnings and cautions in the Operating Instructions and on the unit should be strictly followed, as well as the safety suggestions below.

Warning

To prevent electric shock or injury, these safety instructions should be followed in the installation, use and servicing the unit.

Installation

Attachments - Do not use attachments not recommended by the unit manufacturer as they may result in the risk of fire, electric shock or injury to persons.

Water and Moisture - Do not use this unit near water - for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.

Heat - Do not use this unit near sources of heat, including heating vents, stoves, or other appliances that generate heat. It also should not be placed in temperatures less than 5°C (41°F) or greater than 35°C (95°F).

Mounting surface - Place the unit on a flat, even surface.

Accessories - Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury to a child or an adult, and serious damage to the appliance. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the unit. Any mounting of the appliance should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

Portable cart - An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

PORTABLE CART WARNING



S3125A

Ventilation - The unit should be situated with adequate space around it so that proper heat ventilation is assured. Allow 10 cm clearance from the rear and the top of the unit, and 5 cm from the each side.

Slots and openings in the cabinet and the back or bottom are provided for ventilation, and to ensure reliable operation of the unit and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the unit on a bed, sofa, rug or other similar surface. (This unit should never be placed near or over a radiator or heat register.) This unit should not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.

Object and Liquid Entry - Never push objects of any kind into this unit through the cabinet slots as they may touch dangerous voltage points or short-circuit parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.

Electric Power

Power Sources - This unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. To operate unit on battery power, or other sources, refer to the operating instructions.

Grounding or Polarization - This unit is provided with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

Power-Cord Protection - This unit is provided with an attachment plug having overload protection. This is a safety feature. See operating instructions for replacement or resetting of protective device. If replacement of the plug is required, be sure the service technician has used a replacement plug specified by the manufacturer that has the same overload protection as the original plug.

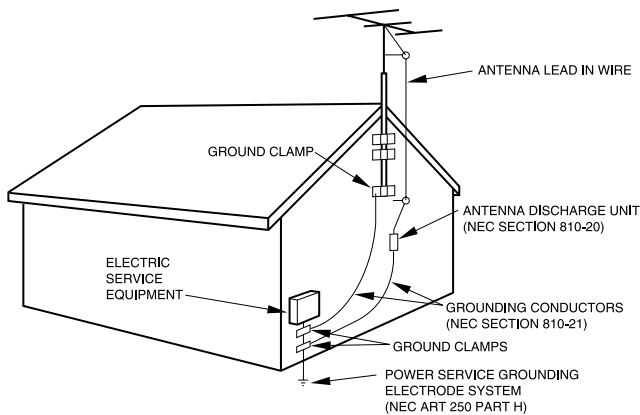
Overloading - Do not allow anything to rest on the power cord. Do not overload wall outlets and extension cords as this can result in fire or electric shock. Do not locate this unit where the cord will be abused by persons walking on it.

Outdoor Antenna

Power lines - An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

Outdoor Antenna Grounding - If an outside antenna or cable system is connected to the unit, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No.70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See the figure.

Antenna Grounding According to the National Electrical Code



NEC-NATIONAL ELECTRICAL CODE

Lightning

For added protection for this unit receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the unit due to lightning and powerline surges.

Maintenance

Cleaning - Unplug this unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

Damage Requiring Service

Unplug this unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- 1) When the power cord or plug is damaged or frayed.
- 2) If the liquid has been spilled into the unit.
- 3) If the unit has been exposed to rain or water.
- 4) If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to normal operation.
- 5) If the unit has been dropped or the cabinet has been damaged.
- 6) When the unit exhibits a distinct change in performance - this indicates a need for service.

Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Replacement Parts - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or having the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

Safety Check - Upon the completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

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GENERAL

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Check your system and accessories

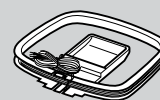
HT-DV90

HT-DV90 DVD stereo receiver
 SX-F90 Front speakers
 SX-R90 Surround speakers
 SX-C90 Center speaker
 TS-W90 Subwoofer
 Front speaker cord (approx. 4m/13 ft.) x 2
 Surround speaker cord (approx. 8m/26 ft.) x 2
 Center speaker cord (approx. 3m/10 ft.) x 1
 Subwoofer cord (approx. 5m/16 ft.) x 1

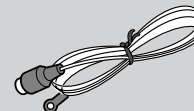
Remote control



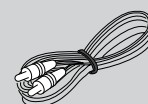
AM antenna



FM antenna



Video connecting cord

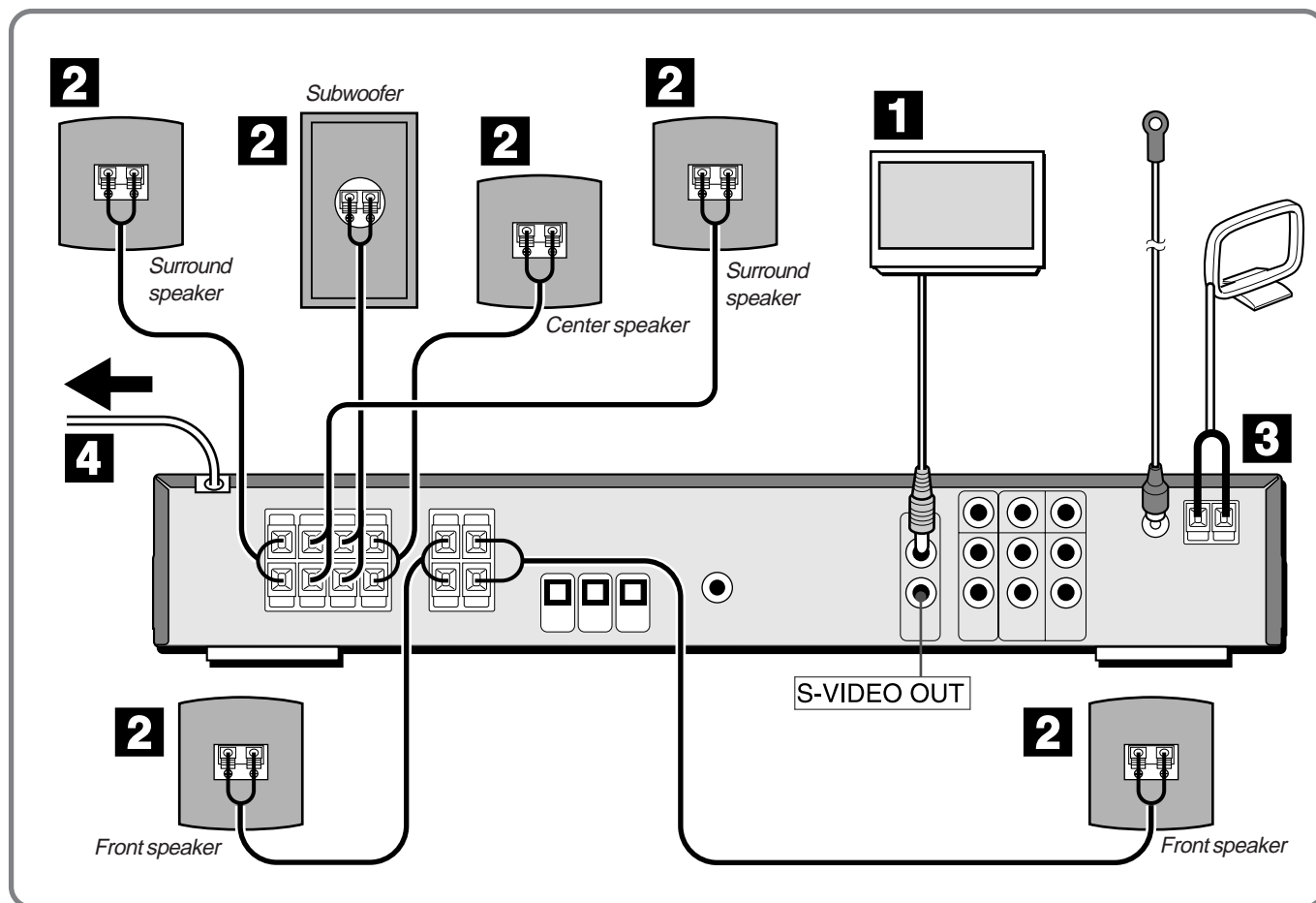


CONNECTIONS

IMPORTANT

Connect the speakers, antennas, and all optional equipment first.

Then connect the AC cord.



1 Connect your television set to this unit.

If your TV has an S-video input jack;

Connect the **S-VIDEO OUT** jack of this unit to the S-video input jack of your TV with an optional S-video connecting cord. Also connect the **VIDEO OUT** jack of this unit to the video input jack of your TV since the signal from S-VIDEO OUT jack is output only when the function is DVD/CD.

If your TV does not have an S-video input jack;

Connect the **VIDEO OUT** jack of this unit to the video input jack of your TV with the supplied video connecting cord.

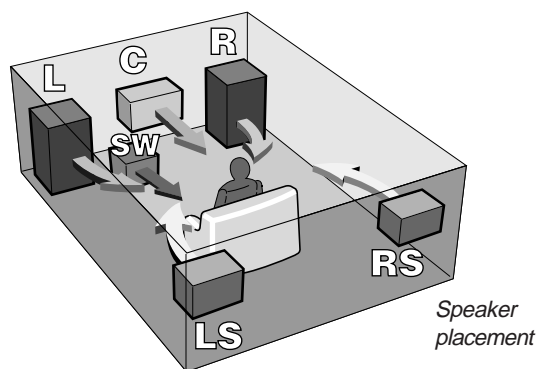
NOTE

- The illustration here shows the connection to the VIDEO jack. S-(separate) video connection, if available, offers higher quality than conventional video (composite) connection.
- If your television is a 16:9 (wide) ratio set, the default "TV DISPLAY" setting has to be changed in the DVD setup. See "TV DISPLAY", page 31.
- Direct connection between this unit and your TV set is recommended, as described above. If the video signal from this unit is made to pass through any other video equipment, the picture will be blurred when playing copy-protected DVDs.
- To view the video output from this unit, select the corresponding video input on your TV.

2 Connect the speakers to this unit.

All speakers for a full 5.1-channel home theater configuration come supplied with your DVD system.

- ① Place the speakers in their proper position.



The front and the surround speakers appear identical but should be differentiated. Check their rear panels. Either of the two front speakers can be used as the right or the left one, and likewise for the surround speakers.

- **L&R: Front speakers**

- **C: Center speaker**

Place it in the center of the two front speakers, possibly on or below the TV set.

- **LS&RS: Surround speakers**

Place them directly to the side of or slightly behind the listening area. Align them horizontally, preferably 0.6 to 1 meter above ear height.

- **SW: Subwoofer**

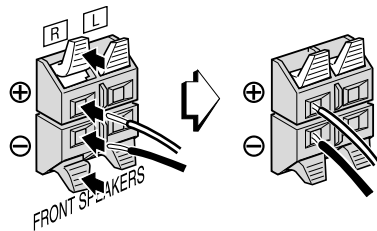
Place it anywhere between the two front speakers.

NOTE

- Do not place the left and right front speakers close to the TV set, as doing so may cause picture noise.
- Sound output from the center and surround speakers is only available when the surround effect (Dolby Surround or DTS Surround etc.) is activated with the appropriate setting.
- To mount the front and surround speakers on the wall, see "MOUNTING THE FRONT AND SURROUND SPEAKERS", page 8.

② Connect the speakers.

- The black-colored cord goes to the \ominus terminals and the other cord goes to the \oplus terminals.



Connecting the speaker cord to the terminals

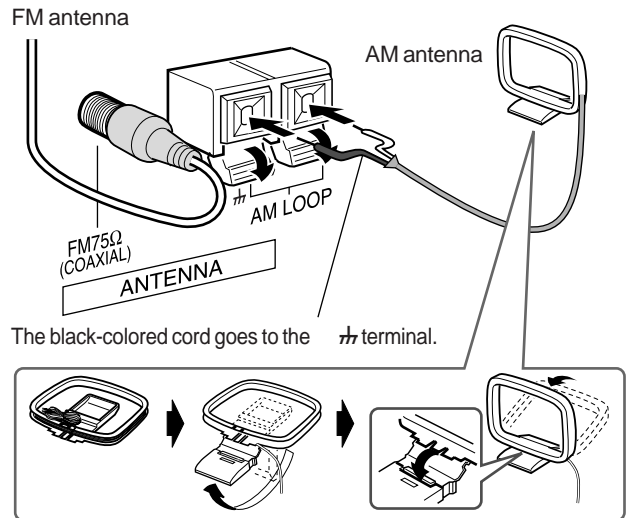
- Connect the cords to the corresponding speakers. Hold down the lever to insert the cord, then release.
- Connect the cord from the right front speaker to the **FRONT SPEAKERS R** terminals, and the cord from the left front speaker to the **FRONT SPEAKERS L** terminals.
- Connect the cord from the right surround speaker to the **SURROUND SPEAKERS RS** terminals, and the cord from the left surround speaker to the **SURROUND SPEAKERS LS** terminals.
- Connect the cord from the center speaker to the **CENTER SPEAKER** terminals.
- Connect the cord from the subwoofer to the **SUB WOOFER** terminals.

NOTE

- Connect the speaker cords securely to the terminals. Improper connection may cause a short circuit.
- When connecting the speakers that are not supplied, confirm the speaker impedance and the speaker setting of this unit (page 25).

3 Connect the supplied antennas.

Connect the FM antenna to the **FM 75 Ω (COAXIAL) jack** and the AM antenna to the **AM LOOP** terminal.



4 Connect the power supply.

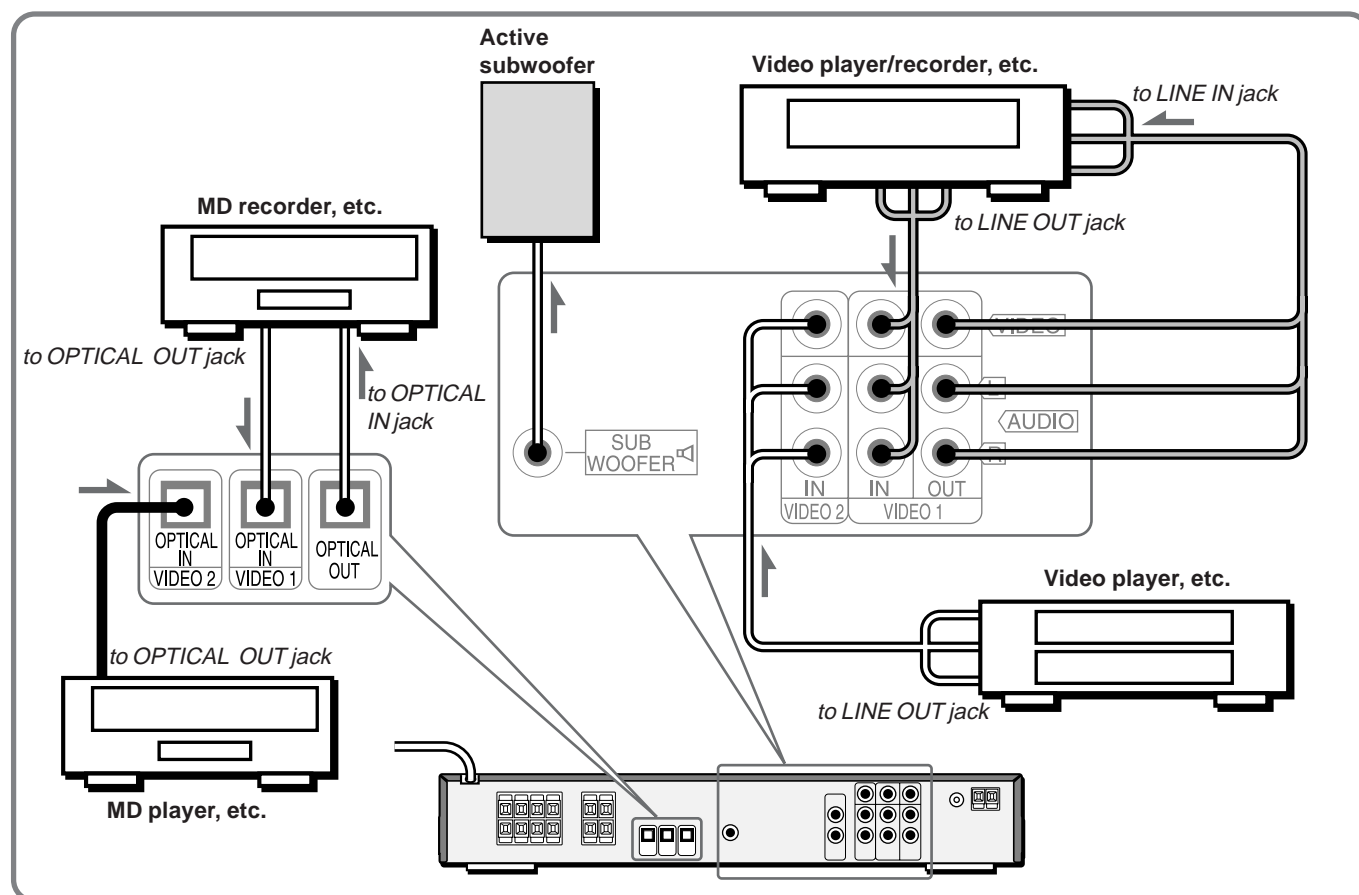
Plug in the AC power cord of this unit to a wall outlet.

NOTE

- Do not leave objects generating magnetism, such as credit cards, near the speakers, as the objects may be damaged.
- Do not bring the FM antenna near metal objects or curtain rails.
- Do not bring the AM antenna near other optional equipment, the stereo system itself, the AC cord or speaker cords, since noise will be picked up.
- Do not unwind the AM antenna wire.

CONNECTING OTHER EQUIPMENT

Besides the basic connections described earlier, other equipment can be connected to this unit as needed. Before making additional connections, be sure to turn off the power and disconnect power supply for this unit and other equipment. Wall mounting of the speakers is also described here.



AUDIO VIDEO 1 and VIDEO VIDEO 1 jacks

These jacks output and accept video and analog audio signals to and from the connected equipment. Connect audio-visual equipment such as a video recorder to these jacks, using two optional audio-visual connecting cables with RCA plugs.

- Connect the line output jacks of the equipment to the **VIDEO 1** input jacks (**AUDIO VIDEO 1 IN L**, **AUDIO VIDEO 1 IN R**, and **VIDEO VIDEO 1 IN**) of this unit.
- Connect the line input jacks of the equipment to the **VIDEO 1** output jacks (**AUDIO VIDEO 1 OUT L**, **AUDIO VIDEO 1 OUT R**, and **VIDEO VIDEO 1 OUT**) of this unit.
- Be sure to connect properly according to the color-coding;
AUDIO L: white plugs and jacks
AUDIO R: red plugs and jacks
VIDEO: yellow plugs and jacks

NOTE

- When playing/recording the source through the equipment connected to the **AUDIO VIDEO 1 OUT** jacks, set the surround playback mode to **STEREO** (page 24).
- The sound selected on this unit's function is output from **VIDEO 1 OUT** jacks.
- The video is output from the **VIDEO 1 OUT** jack only when the function is **VIDEO 2**.
- When recording Dolby Digital source through the equipment connected to the **AUDIO VIDEO 1 OUT** jacks, dynamic range can be adjusted (page 29).

AUDIO VIDEO 2 and VIDEO VIDEO 2 jacks

These jacks accept video and analog audio input signals from the connected equipment. Connect audio-visual playback equipment, such as a video player to these jacks, using an optional audio-visual connecting cable with RCA plugs.

- Connect the line output jacks of the equipment to the **VIDEO 2** jacks (**AUDIO VIDEO 2 IN L**, **AUDIO VIDEO 2 IN R**, and **VIDEO VIDEO 2 IN**) of this unit.
- Be sure to connect properly according to the color-coding;
AUDIO L: white plugs and jacks
AUDIO R: red plugs and jacks
VIDEO: yellow plugs and jacks

OPTICAL IN VIDEO 1/OPTICAL IN VIDEO 2 jack / OPTICAL OUT jack

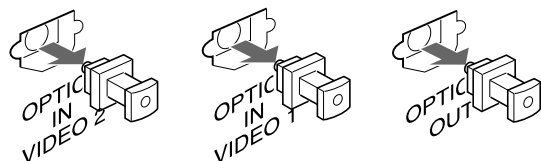
The **OPTICAL IN VIDEO 1** jack and **OPTICAL IN VIDEO 2** jack accept digital audio input from connected equipment.

The **OPTICAL OUT** jack outputs digital audio signals to the connected equipment.

Connect digital audio playback/recording equipment, such as an MD recorder, a DAT deck, or a CD-R deck, etc. with optional optical fiber cables.

Connect the optical input jack of the connected equipment to the **OPTICAL OUT** jack, and the optical output jack of the equipment to the **OPTICAL IN VIDEO 1** jack or the **OPTICAL IN VIDEO 2** jack.

Before connecting the cable, remove the dust cap from the jacks. Reattach them when the jacks are not to be used.



CAUTION ON CONNECTING EQUIPMENT TO THE OPTICAL OUT JACK

When connecting digital equipment without a built-in Dolby Digital or DTS decoder, do not play back Dolby Digital or DTS source with multichannel surround sound. When connecting equipment that does not conform to 96 kHz Linear PCM source, do not play back 96 kHz Linear PCM source. It may cause a high level of noise which could harm your ears and damage the speakers.

- The **OPTICAL IN VIDEO 1** or **2** jack shares the same video source as the VIDEO 1 or 2 jack.

SUBWOOFER jack

This jack outputs the low frequency sounds.

Your DVD system comes supplied with a passive (non-powered) subwoofer, to be connected to the SUBWOOFER terminals, as described on page 6.

However, if you wish to connect an optional active (powered) subwoofer, connect it to this jack using an optional audio connecting cord with RCA plugs.

PHONES jack

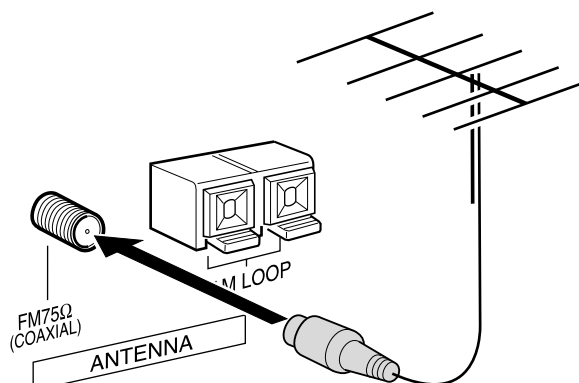
Connect headphones with a stereo mini plug (\varnothing 3.5 mm, $\frac{5}{32}$ in.). The jack is located at the front of this unit.

- No sound is output from the speakers while the headphones are plugged in.
- When the headphones are plugged in, the Dolby Pro Logic surround system is canceled. The Dolby Digital or the DTS surround system automatically switches to the 2ch STEREO mode.

CONNECTING AN OUTDOOR ANTENNA

For better FM reception, use of an optional outdoor antenna is recommended.

Connect the outdoor antenna to **FM 75 Ω** (COAXIAL) jack.

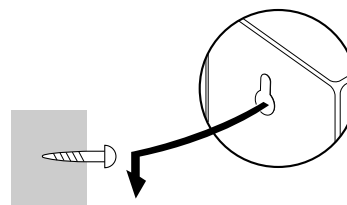


MOUNTING THE FRONT AND SURROUND SPEAKERS

You can mount the front and/or the surround speakers, if you want to do so.

Using wall mounting screws (not supplied)

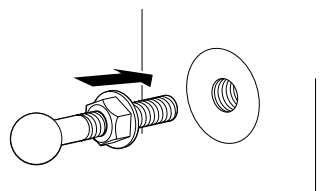
Select a spot that will hold the weight of the speakers and carefully mount the surround speakers so that they are firmly secured.



Using a speaker mounting kit (not supplied)

The front and surround speakers are equipped with a 5 mm threaded insert on their back side. Use it to attach the ball shaft of a speaker mounting kit on the market.

Refer to the instructions of the mounting kit for further information.



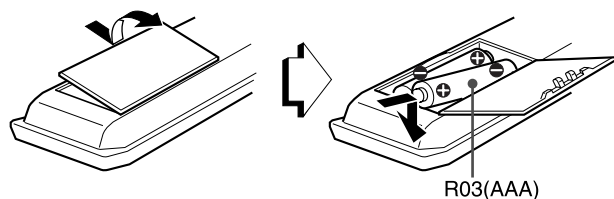
You can attach the speakers to the pedestal on the market with the 5 supplies screws. Refer to the instructions of the pedestal for further information.

AIWA disclaims any responsibility for injury to persons or other accidents caused by not fitting the front and/or surround speakers properly or if the place of the installation is not suitable.

REMOTE CONTROL

INSERTING BATTERIES

Open the battery cover on the rear and insert two R03 (size AAA) batteries.



When to replace the batteries

The maximum operational distance between the remote control and the sensor on the main unit should be approximately 5 meters (16 ft.). When this distance decreases, replace the batteries with new ones.

NOTE

- If the remote control is not going to be used for an extended period of time, remove the batteries to prevent possible electrolyte leakage.
- The remote control may not operate correctly when:
 - The line of sight between the remote control and the remote sensor inside the display window is exposed to intense light, such as direct sunlight
 - Other remote controls are used nearby (those of a television, etc.)



OPERATING OTHER EQUIPMENT

You can set the remote control to operate other equipment by inputting the brand code.

Setting the brand code

- 1 Turn on the equipment to be set.
- 2 Hold down the corresponding source button (**VIDEO 1**, **VIDEO 2**, **TV**, **CABLE/SAT.**) and press **0-9** to input the three-digit brand code. (Brand code is shown at the end of the operating instructions.)
- 3 Release the corresponding source button.
The setting is completed.

Operating other equipment

Press the corresponding source button. The remote control goes to the corresponding source mode. **0-9**, **TV/VIDEO**, **TV CH** , **TV VOL**  and **POWER** etc., are available.

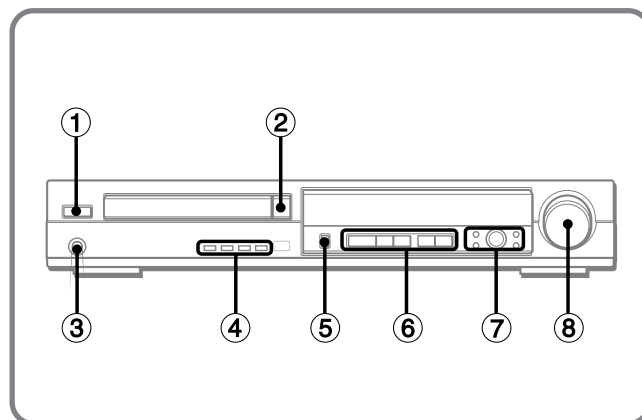
Pressing **POWER** again within 3 seconds turns this unit of f even when the remote control is the corresponding source mode.

When operating this unit, press **DVD/CD** or **TUNER/BAND**.

NOTE

- This remote control may not correspond to all models of the brand shown at the end of the operating instructions.
- When the batteries are removed from the remote control, all settings stored in memory may be lost.
- Some buttons on the remote control may not work exactly .

PARTS AND CONTROLS



MAIN UNIT

① POWER STANDBY/ON

Turns the unit on and of f (standby).

② OPEN/CLOSE

Opens and closes the disc tray .

③ PHONES jack

Plug in here an optional headphones set with a stereo mini plug (ø 3.5mm, 5/32 in.). Speaker output is canceled.

④ SURROUND

Selects a listening mode.

BASS/TREBLE

Adjusts the bass/treble level.

SLEEP

Enters sleep-timer setting mode.

BAND

Selects the radio band.

⑤ FUNCTION

Selects DVD/CD, FM (AM), VIDEO 1 (ANALOG), VIDEO 1 (DIGITAL), VIDEO 2 (ANALOG) or VIDEO 2 (DIGIT AL) function.

⑥ PRESET

Disc: starts playback.

Radio: switches between tuning mode and preset mode.

CLEAR

Disc: stops playback.

Radio: clears a station preset.

IISET

Disc: pauses playback.

Radio: stores the received station to preset.

TUNING- , TUNING+

Disc: skips to a previous or a succeeding chapter/track when pressed, searches a chapter/track in fast forward or fast reverse playback when held down.

Radio: manually tunes down or up within the band (tuning mode). Selects the preset channel (preset mode).

⑦ TOP MENU

Displays the title menu.

RETURN

Returns to the previous menu screen.

▲▼◀▶ ENTER

Selects the menu item and enters the selected item.

MENU

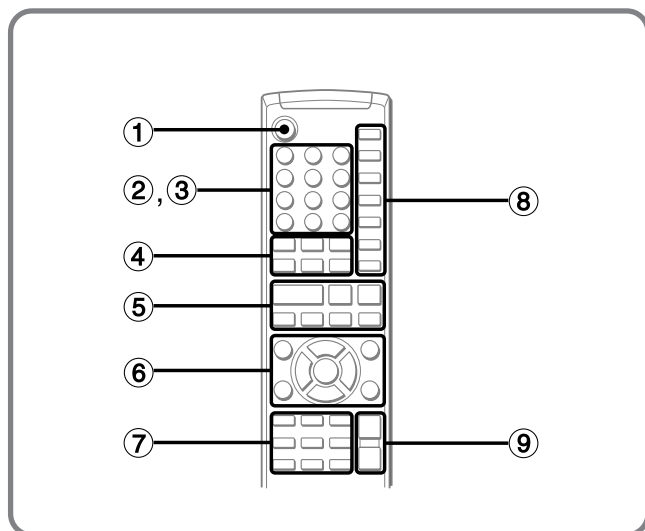
Displays the menu for DVDs.

SETUP

Enters the setup menu for DVDs.

⑧ VOLUME

Adjusts the volume.



REMOTE CONTROL

Buttons with the same or similar names between the remote control and the main unit basically serve the same function.

NOTE

When the remote control mode is VIDEO 1, VIDEO 2, TV or CABLE/SAT., you cannot operate the main unit properly. When operating the main unit, press **DVD/CD** or **TUNER/BAND**. When the remote control mode is changed, the function of the main unit is also changed.

① POWER

② 0-9

Selects a title/chapter/track of specified number.

+10

Uses this button for operating other equipment if needed.

C

Clear the program memory.

③ The numbered buttons take on these functions when pressed together with SHIFT:

SP SETUP

Enters the speaker setting mode.

MIDNIGHT

Adjusts dynamic range (Dolby Digital software only).

ZOOM

Enlarge the picture (DVDs only).

PRGM

Enters programed playback mode (CDs only).

RANDOM

Enters random playback mode (CDs only).

REPEAT

Enters repeat playback mode.

SLEEP

MONO TU

Switches between stereo or monaural FM reception.

TITLE/CHP.

Switches the display between title and chapter.

④ VIDEO 1

Selects VIDEO 1 function and the remote control goes to VIDEO 1 mode.

VIDEO 2

Selects VIDEO 2 function and the remote control goes to VIDEO 2 mode.

TV

The remote control goes to TV mode.

DVD/CD

Selects DVD/CD function.

TUNER/BAND

Selects radio function and the radio band.

CABLE/SAT.

The remote control goes to cable/satellite mode.

⑤ ▶ PRESET

■ CLEAR

IISET

◀◀ SLOW◀II, ▶▶ SLOWII▶

Plays back at slow speed (DVDs only).

◀◀ TUNING-, ▶▶ TUNING+

⑥ TOP MENU

↺ RETURN

▲▼◀▶ ENTER

TV Ch ^ v (▲▼)

Selects TV channel.

TV Vol +- (▶◀)

Adjusts TV volume.

MENU

SETUP

⑦ SHIFT

Hold down when pressing a numbered button to change its function to that printed above the number.

- e.g., "Press **SHIFT+SP SETUP** on the remote control" means to hold down SHIFT and press 4/SP SETUP to use the button for the speaker setting.

SURROUND

BASS/TREBLE

SUBWOOFER (+, -)

Adjusts the subwoofer level.

CENTER (+, -)

Adjusts the center level.

REAR (+, -)

Adjusts the rear (surround) level.

⑧ MUTE

Mutes the sound.

ANGLE

Selects the angle to view the scene (DVDs only).

AUDIO

Changes audio tracks (DVDs only).

SUBTITLE

Changes the subtitle language (DVDs only).

ON SCREEN

Displays the disc playback status on the TV screen.

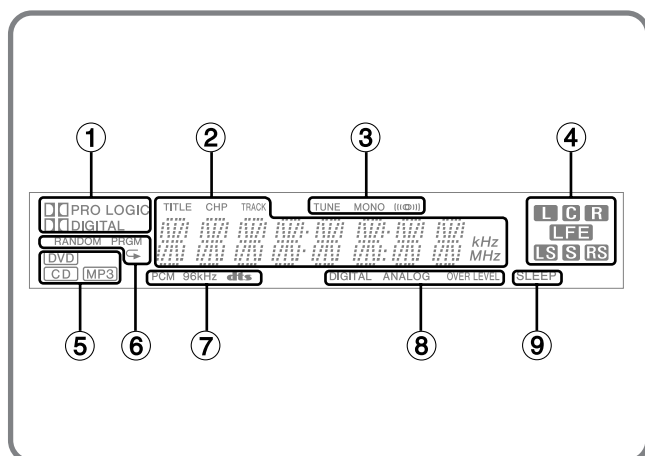
TV/VIDEO

Switches between TV or VIDEO.

DIGITAL/ANALOG

When the function is VIDEO 1 or VIDEO 2, selects digital or analog input.

⑨ VOLUME +—



⑦ Audio signal type indicators

Indicates the signal type of the current audio track.

“PCM” lights up when playing back linear PCM audio signal. (MPEG audio signal is converted to linear PCM audio signal.)

“96 kHz” indicates the sampling frequency of linear PCM audio signal.

“dts” lights up when playing back dts (Digital Theater System) audio signal.

⑧ Input type indicators

When the function is VIDEO 1 or VIDEO 2, “DIGITAL” or “ANALOG” lights up according to the type of audio input.

“OVER LEVEL” lights up when external analog input level is too high.

⑨ SLEEP indicator

Lights up when the sleep function is active.

DISPLAY WINDOW

① Surround playback mode indicators

Indicates the surround output type in which the source actually being played.

② Main display

Shows general information such as the active function, current adjustment mode, title/chapter/track number, elapsed time or radio frequency

③ TUNE/MONO/((Ⓢ)) indicators

“TUNE” lights up during radio reception.

MONO/((Ⓢ)) indicates the type of radio reception.

④ Active channel indicators

Lights up to show each speaker channel.

- L (Left front)
- C (Center)
- R (Right front)
- LFE (Subwoofer)
- LS (Left surround)
- S (lights up when rear channel is monaural)
- RS (Right surround)

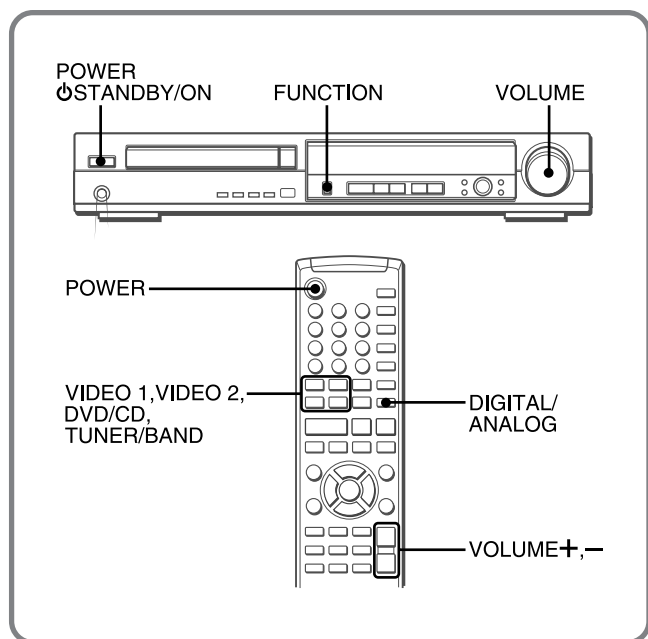
⑤ Disc type indicators

Indicates the type of current disc (DVD, CD or MP3).

⑥ Playback mode indicators

Lights up to show the random, programed and repeat playback modes.

BEFORE OPERATION



TURNING THE POWER ON

Press **POWER** **STANDBY/ON** (**POWER** on the remote control) to turn the unit on and off.

ADJUSTING VOLUME

Turn **VOLUME**, or press **VOLUME +** or **-** on the remote control.

The volume level is displayed as a number from MIN(0) to MAX (80).

The volume level is automatically set to 60 when the power is turned on with the volume level set to 61 or higher.

NOTE

- When any one of speaker channel level is set to more than +1 dB (pages 26, 28), the maximum volume level decreases by the speaker channel level.

SELECTING A SOURCE

Press **FUNCTION**.

The function changes as following order.

- ① DVD/CD
- ② FM (AM)
- ③ VIDEO 1 (ANALOG)
- ④ VIDEO 1 (DIGITAL)
- ⑤ VIDEO 2 (ANALOG)
- ⑥ VIDEO 2 (DIGITAL)

The current function name appears on the display.

Selecting with the remote control

Press **VIDEO 1**, **VIDEO 2**, **DVD/CD** or **TUNER/BAND**.

When VIDEO 1 or VIDEO 2 is selected with the remote control

The active external audio source is selected by a combination of the **VIDEO 1** or **VIDEO 2** function button and the **DIGITAL/ANALOG** button on the remote control.

- Pressing **VIDEO 1** selects either the OPTICAL IN VIDEO 1 jack (digital audio input) or the AUDIO VIDEO 1 IN jacks (analog audio input).
- Similarly, pressing **VIDEO 2** selects either the OPTICAL IN VIDEO 2 jack (digital audio input) or the AUDIO VIDEO 2 IN jacks (analog audio input).
- Pressing **DIGITAL/ANALOG** switches alternately between the selected digital and analog audio inputs. The DIGITAL or the ANALOG indicator lights up on the display.

For example, to select input from the OPTICAL IN VIDEO 2 jack ;

- 1 Press **VIDEO 2**.

The name of the selected input is displayed.

Example: VIDEO 2 is selected



- 2 If "ANALOG" input is selected, as with the case in this example, press **DIGITAL/ANALOG** to switch to the digital audio input. DIGITAL indicator lights up.



The video source is shared between the digital and analog audio inputs

The active video source remains the same when audio input is switched between digital and analog.

- When the **VIDEO 1** function (i.e., digital audio input from the OPTICAL IN VIDEO 1 jack) is selected, the video input remains that from the VIDEO VIDEO 1 IN jack.
- Similarly, when the **VIDEO 2** function (i.e., digital audio input from the OPTICAL IN VIDEO 2 jack) is selected, the video input remains that from the VIDEO VIDEO 2 IN jack.

[Overview of external input selection]

Buttons	Active input jacks		
	DIGITAL/ANALOG	Audio	Video
VIDEO 1	DIGITAL	OPTICAL IN VIDEO 1	VIDEO VIDEO 1 IN
	ANALOG	AUDIO VIDEO 1 IN L/R	
VIDEO 2	DIGITAL	OPTICAL IN VIDEO 2	VIDEO VIDEO 2 IN
	ANALOG	AUDIO VIDEO 2 IN L/R	

If the "OVER LEVEL" indicator lights up

The input level of the analog external source is too high.

Do not input from the external equipment at high level.




This unit can play DVD and audio CDs.

The descriptions in this section apply to all types of discs that can be played on this unit unless otherwise noted.

BEFORE USE

SUPPORTED DISC FORMATS

This unit can play discs with the following logos.

	DVDs (8 cm disc/12 cm disc)
	Audio CDs (CDDA) (8 cm disc/12 cm disc)
	CD-R/RW (8 cm disc/12 cm disc)

- This unit will play back an MP3-CD. See “DESCRIPTIONS OF MP3”, page 14.
- This unit will play back a finalized CD-R/R W disc. However , it may not play a CD-R/R W disc that is recorded on personal computers or some kinds of CD-R/R W recorders because of dif ferences in recording platforms.
- Do not load an unrecorded CD-R/R W disc. It will take over 30 seconds to read the disc. The disc may be damaged if you open the disc compartment while the disc is being loaded.
- Do not attach any seal or label to either side (the recordable side or the labeled side) of a CD-R/R W disc. It may cause malfunction.
- This unit cannot play other types of discs such as DVD-ROMs, CD-Is, CD-ROMs, PHOTO CDs or Aluminum-lined discs.
- Do not use irregular shaped CDs such as heart-shaped or octagonal discs. It may damage both the unit and the disc.

COLOR SYSTEM SETTING

This unit is designed for the PAL and NTSC color system. For the setting of color system, refer to “TV TYPE”, page 31.

- “NTSC”: When connecting to a NTSC system TV. (Default)
- “PAL”: When connecting to a P AL system TV.
- “MULTI”: When connecting to a multi color system TV.

NOTE

- This unit is designed for the NTSC and P AL systems only . Systems other than NTSC or P AL, for example NTSC 4.43 or SECAM are not suitable for this unit.
- If the color is abnormal or the picture is distorted in MUL TI mode, switch to NTSC or P AL.
- If the disc of the NTSC (P AL) color system is played in P AL (NTSC) setting, sometimes the picture is distorted. This is because of the dif ference between the P AL and the NTSC format.

REGION CODE OF THE DISC PLAYER AND DVDS

This DVD player is designed and manufactured for playback of region “1” encoded DVD software. Region code appears on most DVD labels to indicate which type of player can play the disc.



A DVD without a “1” or “ALL” on its disc label cannot be played on this player . If you try to play such a disc, “WRONG REGION” on the TV screen and “DISC ERR” on the unit’s display will appear . Some DVDs may not be properly labeled with a region code, although they may be region encoded and thus be limited in its playback area.

SOFTWARE DEPENDENT FEATURES OF DVDS

Some playback operations of DVDs may be intentionally fixed by software manufacturers. As this unit plays DVDs according to the design of the software manufacturer , some playback features of this player may not be available, while other functions may be added.

Refer to the instructions supplied with the DVDs. Some DVDs made for business purposes may not be played on this player .

DISC-RELATED TERMS

Title (DVD only)
A title is the largest sub-division of a DVD; a movie for video software, or an album for audio software. Each title is assigned a title number , enabling you to locate the title you want.

Chapter (DVD only)
Chapters are sections in a picture or a musical title on a DVD. A title is usually composed of several chapters. Each chapter is assigned a chapter number , enabling you to locate the chapter you want. Some discs, however , may not have chapters recorded.

Track (audio CD only)
Tracks are sections of a picture or a musical piece on an audio CD. Each track is assigned a track number , enabling you to locate the track you want.

COPYRIGHT PROTECTION

It is forbidden by law to copy , broadcast, show , broadcast via cable, play in public, or rent copyright material without permission.

This unit features the copy protection function developed by Macrovision. Copy protection signals are included in some DVD discs. If you record such discs on a VCR, picture noise will appear during recording and playback.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only , unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

DESCRIPTIONS OF MP3

- An MP3 file stores audio data compressed using MPEG1, the audio layer-3 file-coding scheme.
- In this manual, CDs, CD-R discs and CD-R W discs are all referred to as “discs”.
- Some files cannot be played back according to the recording conditions of disc.

Notes on playing MP3 files

- An MP3 file must be recorded on a disc in the format compliant with ISO 9660. Note, however , that the unit may not play files in the order they were recorded.
- The maximum allowable number of files in a disc are as follows:
 - number of files : 512 (including number of folders)
- The maximum allowable depth of nested folders is 8.
- It may take 30 seconds or more before the unit can start play of MP3 files, depending on the number of recorded files and the complexity of the folder tree.
- As for a multi-session disc, the unit can play up to 2 sessions.
- The unit may not play MP3 files recorded using a packet writing utility .
- The unit can play MP3 files having a file extension “.mp3”.
- If you play a non-MP3 file that has the “.mp3” file extension, you may hear some noise.

Notes on display indications during play

- Up to 11 characters are displayed for the name of a folder or a file. ID3TAG information is not displayed. Characters other than uppercase letters (“A” to “Z”), numerals (“0” to “9”) and an underscore (_) may not be displayed correctly .
- The elapsed playing time may not be displayed correctly for MP3 files.

Terminology

- ISO 9660
ISO stands for the “International Organization for Standardization”. ISO 9660 determines the file structure for the CD-ROMs. This unit can play MP3 files recorded in the format compliant with ISO 9660.
- Nesting of folders
To organize data files stored in a PC, you can store related files in a folder . A folder can contain other folders as well as files. For example, folder A can contain folder B, and folder B can contain folder C; this is called “nesting of folders”. The maximum depth of nested folders, allowed by ISO 9660, is 8.

- Writing utilities

There are 3 utilities used to record data on a disc.

1. DAO (Disc At Once) utility

All data to be written must be prepared in advance and written onto a disc from the beginning to the end in one operation. No data can be added to a disc on which data were already written with DAO utility .

2. TAO (Track At Once) utility

Data are written onto a disc file by file. Data can be added to a disc on which data were written with TAO utility .

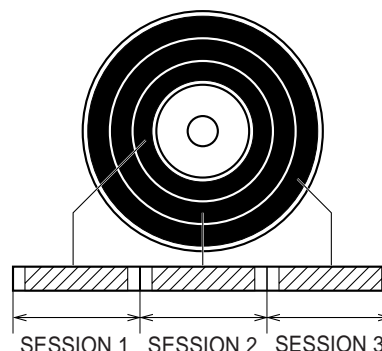
3. Packet writing utility

Files are divided into smaller pieces while being recorded, depending on the size of available spaces on the disc. Data can be added to a disc on which data were written with packet writing utility .

This unit can play MP3 discs recorded using DAO and TAO utilities.

- Multi-session

A session is a collection of data, covering from the beginning to the end of recording made in one operation. With TAO (Track At Once) utility , data can be recorded with several operations. A session corresponds to the data recorded in one operation. This unit can play data recorded in the first 2 operations. In other words, the unit can play up to 2 sessions.

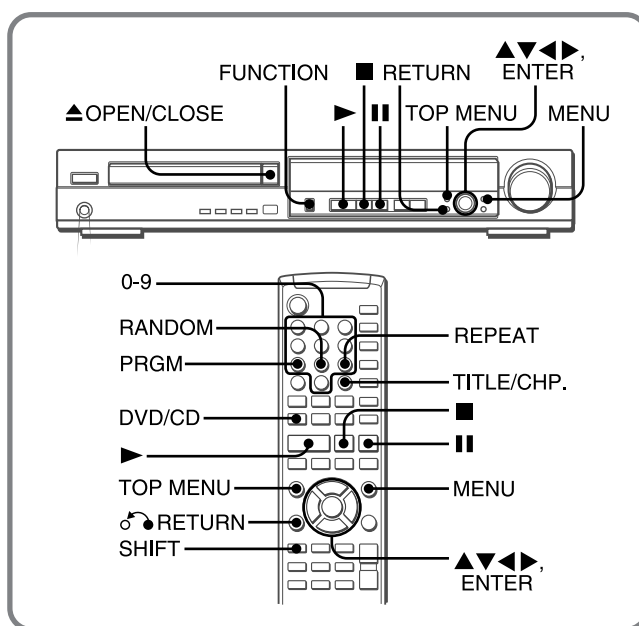


- **File extension**
A 3-character string added to a file name under Windows or DOS environment is called "file extension". A file extension is used mainly to identify types of files. File extension for MP3 files is ".mp3".

Notes on creating MP3 discs

- When converting audio data to MP3
To enjoy high sound quality, we recommend storing MP3 files with a sampling frequency of 44.1 kHz and a fixed bit rate of 128 kbps.
- When creating MP3 discs
Do not store more than 512 folders and files in a disc.
- To play files in the order they were recorded
 1. Use a writing software capable of recording MP3 files in numerical and alphabetical order. For details on using the software, refer to the operating instructions supplied with the software.
 2. Use only one folder. (Do not create a sub-folder within a folder.)
 3. Include a two- or three- digit number at the beginning of each folder or file name so that the folders and files are played in order.
 - <example of recommended names>
 - 01XXXXX.mp3
 - 02XXXXX.mp3
 - 03XXXXX.mp3
 - 04XXXXX.mp3
 - 05XXXXX.mp3
 - <example of names not recommended>
 - 1XXXXX.mp3
 - 5XXXXX.mp3
 - 10XXXXX.mp3
 - 15XXXXX.mp3
 - 20XXXXX.mp3
 - (Numbers at the beginning have different digit number. The tracks will not be played in this order but played in the order of "1", "10", "15", "20" and "5".)
- Do not record other format (CDDA etc.,) in MP3 disc. It may not be played back properly.

BASIC OPERATIONS



PLAYING A DISC

- 1 **To play a DVD, turn on the TV and select the proper input.**

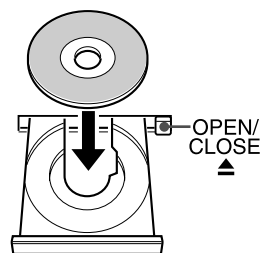
On your TV, select the input from the VIDEO OUT jack (or the S-VIDEO OUT jack, if you are using S-video) of this unit.

- 2 **Select DVD/CD function.**

Press **FUNCTION** repeatedly on the main unit or press **DVD/CD** on the remote control.

- 3 **Press ▲ OPEN/CLOSE to open the disc tray.**

- 4 **Place a disc with the labeled side up.**



- 5 **Press ▲ OPEN/CLOSE again to close the disc tray.**

"LOADING" is displayed while the player loads the disc.

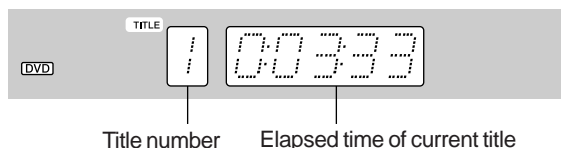
If the disc is not placed correctly, "NO DISC" or "DISC ERR" appears on the unit's display.

En

DVDs:

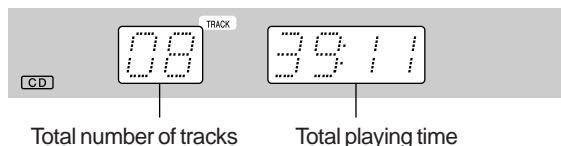
Playback starts automatically .

If the menu is displayed, see “USING THE MENU”, below .



To switch the number between title and chapter , press **SHIFT+TITLE/CHP**. With each press, title or chapter is displayed alternately .

Audio CDs function:



6 If playback does not start automatically, press ► to start playback.

To play back DVDs recorded in Dolby Digital or DTS sound
See section “SURROUND PLAYBACK” (pages 24-26).

To play back an MP3 disc

Menu screen (SMART NAVI) appears on the TV screen after the disc is loaded.

1. Press ▲, ▼, ◀ or ▶ to select PLAY MODE.
SHIFT+PRGM, RANDOM or **REPEAT** is also available.
For the programmed playback, see page 20.
2. Press ▲, ▼, ◀ or ▶ to select the folder and press ENTER.
3. Press ▲, ▼, ◀ or ▶ to select the file.
4. Press ► to start playback.
When the play mode is program, the program file is added each time ► is pressed. To start playback, press ■ and then press ►.

• **0-9** is also available to select the file up to 2 digit number .

The file with (?) cannot be played back since it cannot be read properly .

NOTE

- When loading an 8-cm (3-inch) disc, put it onto the inner circle of the slot.
- Do not place more than one disc.
- Do not tilt the unit with disc loaded. Doing so may cause malfunctions.

USING THE MENU

DVDs with the menu function may automatically display the menu screen when the disc is loaded. Operate the menu as follows.

DVDs

1 Press ▲, ▼, ◀, or ▶ to select your desired program.

2 Press ENTER to begin playback.

To manually display the menu

Press **MENU** or **TOP MENU** during playback or stop.

NOTE

- The disc continues to spin as long as the menu is displayed.
- The contents and operation of the software specific menu vary with the disc. Follow the instructions on the disc and on the menu screen.

STOPPING AND PAUSING

To stop playback

Press ■.

Playback stops. For DVDs, “RESUME” appears and the unit remembers the point at which playback stopped.

To resume playback from the point where it stopped (DVD only)

Press ►.

Playback starts where it last stopped (Resume function).

To clear the point to be resumed (DVD only)

Press ■ again during stop.

“STOP” appears in the TV display . The resume memory is cleared, and playback starts at the beginning of the disc when ► is pressed.

Last scene function (DVD only)

If the disc is taken out or ■ is pressed to clear the resume memory , resume function is still effective (up to 7 discs). Next time the disc is loaded, “PRESS PLAY TO RESUME PLAY” appears on the TV screen. To resume playback, press ► while the message is displayed. If a new disc is loaded when the memory is full, the resume data for the oldest disc is erased. Last screen function may not work with some discs.

To pause playback

Press II.

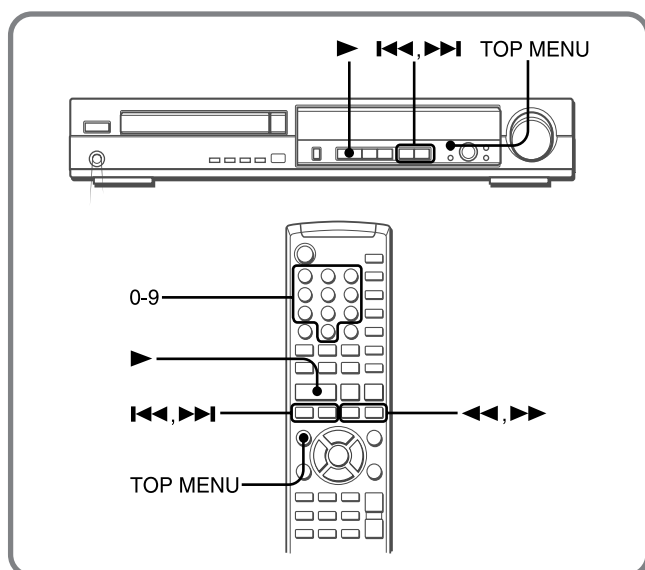
To resume playback, press ►.

NOTE

- DVD playback is resumed with the subtitle and audio language setting at the time it was stopped, regardless of possible later changes.
- During stop of MP3 disc or resume of DVD, the disc is still spinning.

SELECTING A TRACK

Besides the methods described here, discs can also be searched by title/chapter (DVDs), track (CDs) or time. See "ON SCREEN DISPLAY INFORMATION", page 23.



DIRECTLY SELECTING A TRACK WITH THE REMOTE CONTROL (CD ONLY)

A track can be selected directly by entering the track number on the remote control, either during playback or stop.

Press 0-9 to select the desired track.

Example:

To play track 12, press **1, 2**.

To play track 20, press **2, 0**.

Playback begins at the beginning of the selected track and continues to the end of the disc.

FAST FORWARD/REVERSE PLAYBACK

Press ◀◀ or ▶▶ on the remote control or hold down ◀◀ or ▶▶ on the main unit during playback.

"—SCAN x 2" or "+SCAN x 2" is displayed on the TV screen. The disc is played back forward (when pressing ▶▶) or in reverse (when pressing ◀◀) at high speed.

To change playback speed

Press ◀◀ or ▶▶ on the remote control (hold down ◀◀ or ▶▶ on the main unit) repeatedly.

With each press:

DVDs: x 2 → x 4 → x 16 → x 100

CDs: x 2 → x 4 → x 8

To return to normal playback

Press ▶.

NOTE

- There is no audio during fast DVD playback.
- The fast playback speed is the value for a disc with an average bit rate. The actual speed may be different for some discs.
- If the search reaches the beginning or the end of a track, it automatically returns to normal playback. (CDs)

SKIPPING

Press ◀◀ or ▶▶ during playback.

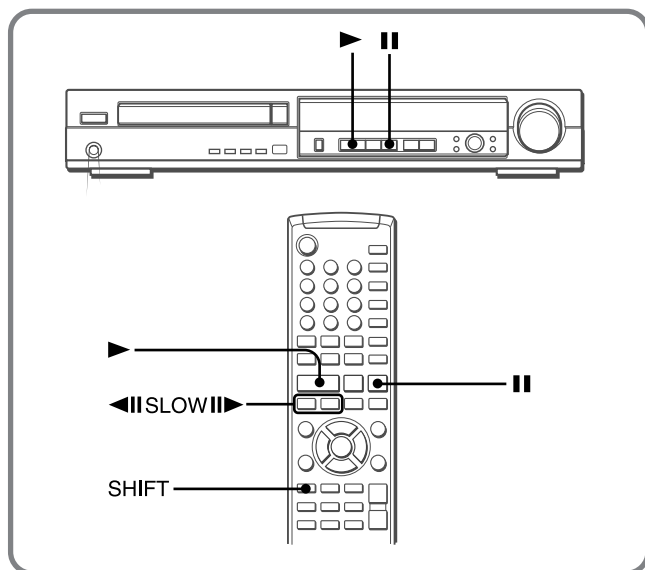
With each press of ▶▶, the disc position skips to the succeeding tracks (CDs) or chapters (DVDs).

When ◀◀ is pressed once, the disc position skips back to the beginning of the current tracks (CDs) or chapters (DVDs).

When ◀◀ is pressed twice or more, the disc position skips back to the previous tracks (CDs) or chapters (DVDs).

Depending on scenes, this operation may not function on DVDs.

FRAME ADVANCE AND SLOW PLAYBACK



FRAME ADVANCE (DVD ONLY)

- 1 Press **||** to pause the disc.
- 2 Press **||** repeatedly to advance frames.
With each press, playback advances one frame.

To return to normal playback
Press **▶**.

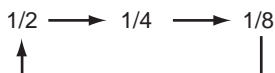
NOTE

There is no audio during Frame Advance.

SLOW PLAYBACK (DVD ONLY)

Press **SHIFT+ SLOW◀||** or **SLOW||▶** on the remote control during playback

To change the slow playback speed
With each press, the playback speed changes as follows:

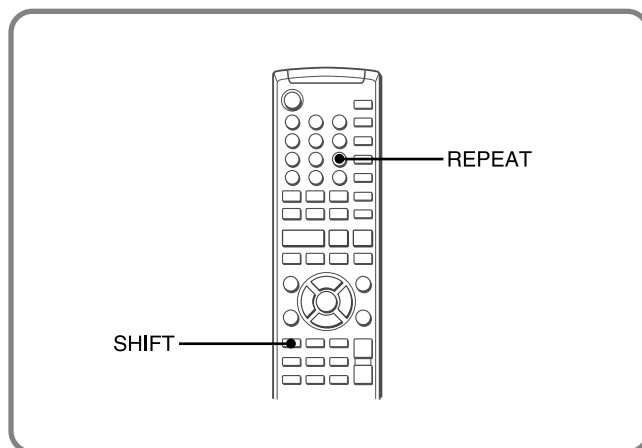


To return to normal playback
Press **▶**.

NOTE

There is no audio during slow playback.

REPEAT PLAYBACK



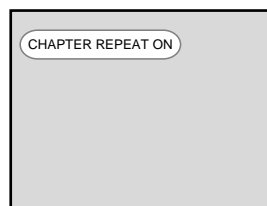
REPEAT PLAYBACK (DVD)

Press **SHIFT+REPEAT** repeatedly on the remote control during playback.

With each press, the Repeat playback mode changes:

CHAPTER: Repeats the current chapter .

TV screen:



TITLE: Repeats the current title.



OFF: Cancels repeat mode. (Normal playback)



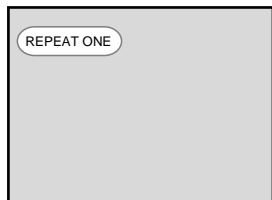
REPEAT PLAYBACK (CDs)

Press **SHIFT+REPEAT** repeatedly on the remote control during playback.

With each press, the Repeat playback mode changes:

ONE: Repeats the current track.

TV screen:



Unit's display



ALL: Repeats all tracks on the disc.



OFF: Cancels repeat mode. (Normal playback)



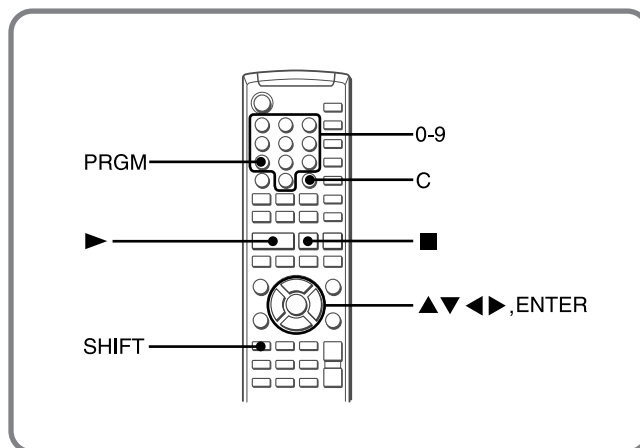
To repeat playback of selected track(s)

Program the track(s) with the programmed playback function, and then press **SHIFT+REPEAT** to repeat playback of the programmed tracks (see "PROGRAMED PLAYBACK", below).

PROGRAMED PLAYBACK (CD ONLY)

You can program up to 32 selected tracks to be played back in your desired order.

If the total playing time of the program exceeds 99 minutes and 59 seconds, the playing time is not displayed properly.



1 Press SHIFT+PRGM on the remote control during stop.

"PRGM" lights up on the unit's display.

2 Press 0-9 on the remote control to select the track.

Example:

To select track 12, press **1, 2**.

To select track 20, press **2, 0**.

3 Press ENTER.

The selected track is programmed.

4 Repeat steps 2 and 3 to program other tracks.

5 Press ► to start playback.

The programmed tracks are played back in the order of entry.

To stop programmed playback

Press **■**.

To return to normal playback mode

Press **SHIFT+PRGM** during stop. At this point, the program is not cleared. Pressing **SHIFT+PRGM** again will be back to programmed playback mode.

To check the program

Press ▲ or ▼ repeatedly during stop in programmed playback mode.

With each press, the track numbers appear in the order programmed on the unit's display.

To clear the program

Press C during stop in the programmed playback mode.

- The program is also cleared in the following cases.

- The disc tray is opened.
- The function is switched.
- The power is turned off.

To clear a programmed track

Press ▲ or ▼ to display the track, and then press C.

To add tracks to the program

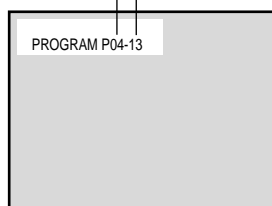
Press ▲ to display the last order, and then repeat steps 2 and 3 during stop in the programmed mode. The new tracks are added to the end of the program.

Programed playback for MP3 disc

1. Press **SHIFT + PRGM** to enter the program mode.
Selecting "PROG-END" from PLAY MODE with ▲, ▼, ◀ or ▶ also enters the program mode.
2. Press ▲, ▼, ◀ or ▶ to select the folder and press **ENTER**.
3. Press ▲, ▼, ◀ or ▶ to select the file to be programmed.
4. Press ▶ or **ENTER**.
The selected file is programmed.

Total programed file

Current programed file



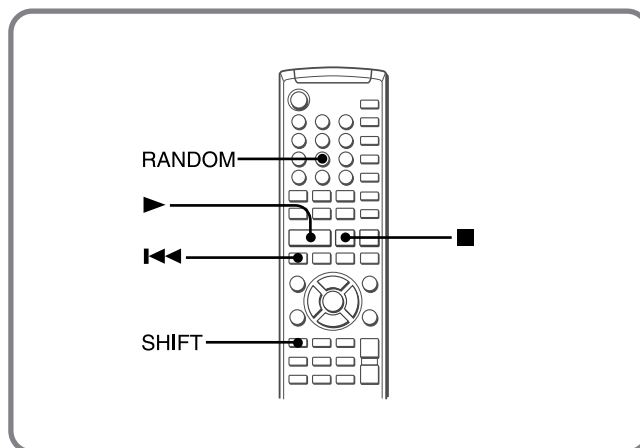
5. Repeat steps 2, 3 and 4 to program other files.
6. Press ■ and then press ▶ to start playback.

NOTE

- Next time the unit enters the program mode, the previous program is cleared

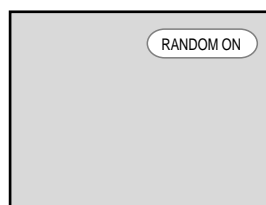
RANDOM PLAYBACK (CD ONLY)

All tracks on the disc can be played randomly.



1 Press SHIFT+RANDOM during stop.

"RANDOM ON" appears on the TV screen and "RANDOM" lights up on the unit's display.



2 Press ▶ to start random playback.

To stop random playback

Press ■.

To cancel random playback

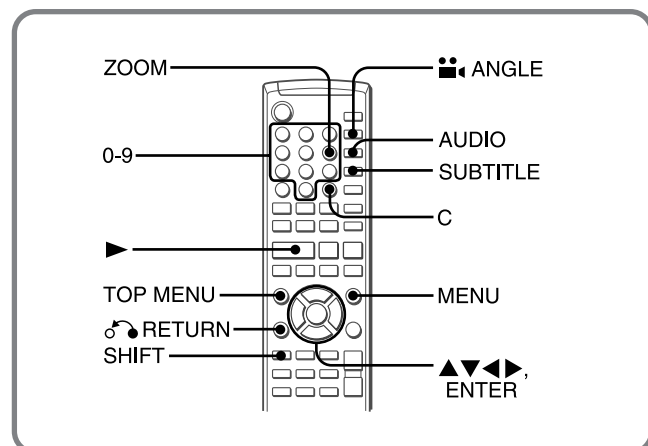
Press **SHIFT+RANDOM** again during stop. "RANDOM OFF" appears on the TV screen and "RANDOM" disappears and the unit goes back to normal playback.

NOTE

During random playback you cannot skip back to the previously played track with ◀◀.

SPECIAL DVD FEATURES

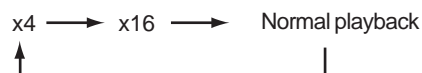
Operations for special features characteristic to DVDs are described here.



ZOOM FUNCTION (DVD ONLY)

Press **SHIFT+ZOOM** on the remote control during playback.

The picture around the center of the screen is enlarged.
With each press:



To move the enlarged picture

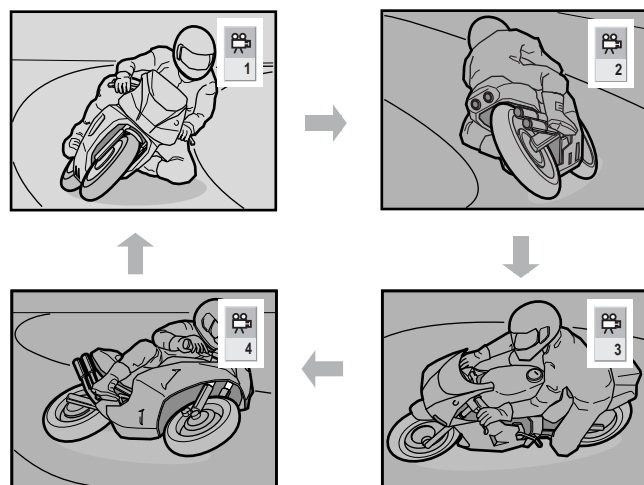
Press **▲**, **▼**, **◀**, or **▶**.

CHANGING THE ANGLE (DVD ONLY)

When playing back a scene shot with multi-angles, you can select the angle to view the scene.
“ANGLE AREA IN” or “ANGLE AREA OUT” appears on the TV screen to show whether the Angle function is effective or not.

Press **ANGLE** on the remote control repeatedly to select a viewing angle.

With each press, the angle will change.



NOTE

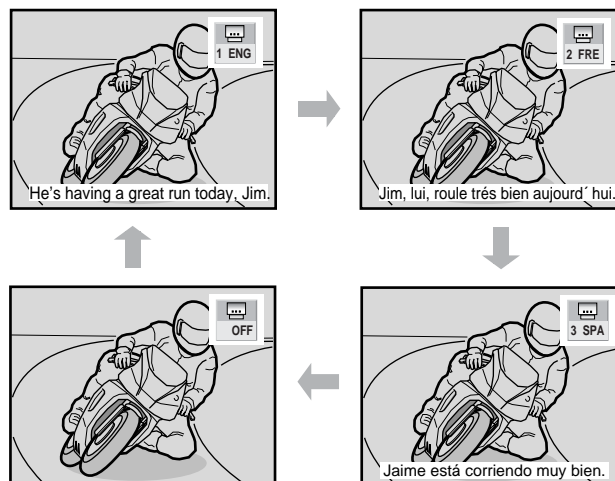
The Angle function works only when playing back a shot with multi-angles. If you press **ANGLE** when playing back a scene or a disc without multiple viewing angles, the symbol is displayed.

SUBTITLES (DVD ONLY)

You can also change the subtitle language if more than one is available.

Press **SUBTITLE** on the remote control repeatedly during playback to select the desired subtitle language.

With each press, the subtitle will change.



NOTE

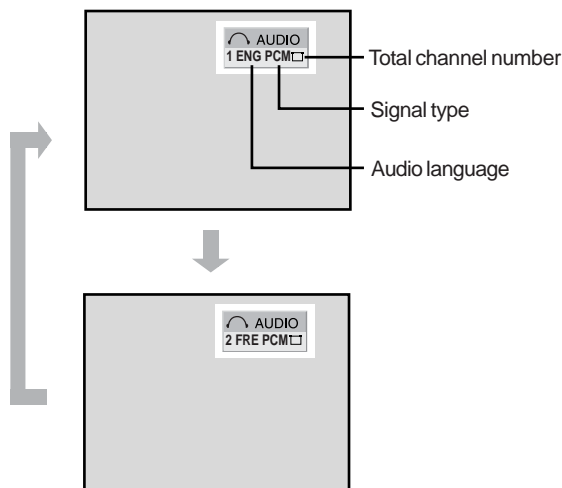
- If you press **SUBTITLE** when playing a disc without subtitles, the “OFF” is displayed.
- The subtitle language can be changed only if the disc contains more than one subtitle language.
- It may take some discs a few moments after you press **SUBTITLE** until the new subtitles are displayed.
- Some discs permit switching the subtitle language only through a menu screen.

CHANGING AUDIO TRACKS (DVD ONLY)

Some DVDs have more than one audio tracks, such as soundtracks in different languages. You can change the audio track when playing such discs.

Press AUDIO on the remote control during playback.

With each press, the audio track will change.



For signal type information, see “ON SCREEN DISPLAY INFORMATION”, page 23.

NOTE

- The audio track can be changed only if the disc contains multiple audio tracks. The number of available audio tracks varies with the disc.
- Some discs permit switching the audio track only through a menu screen.

CHANGING AUDIO CHANNELS (CDs ONLY)

Use this function when playing CDs with different sound tracks in the left and right channels.

Press AUDIO repeatedly during playback.

With each press, the audio channel will change.



- MONO LEFT: left audio channel is output from both front speakers
- MONO RIGHT: right audio channel is output from both front speakers
- STEREO: normal stereo playback

USING A TITLE MENU (DVD ONLY)

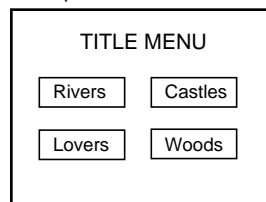
Some DVDs have two or more titles and one of them can be selected.

1 Press TOP MENU during playback.

The title menu appears on the TV screen.

- Pressing RETURN resumes playback at the scene from which the title menu was called.

Example:



2 Press ▲, ▼, ◀ or ▶ to select the title and then press ► or ENTER.

0-9 are also available to select the title.

The playback starts.

NOTE

- The contents and operation of the software specific menu vary with the disc. Follow the instructions on the disc and on the menu screen.

USING A DVD MENU

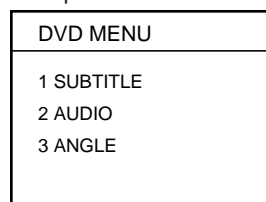
Use this menu to select content, audio, subtitles, etc., from a menu (the DVD menu) that is unique to each disc.

1 Press MENU during playback.

The DVD menu appears on the TV screen.

- Pressing RETURN resumes playback at the scene from which the DVD menu was called.

Example:



2 Press ▲, ▼, ◀ or ▶ to select the menu item and then press ENTER.

0-9 are also available to select the menu item.

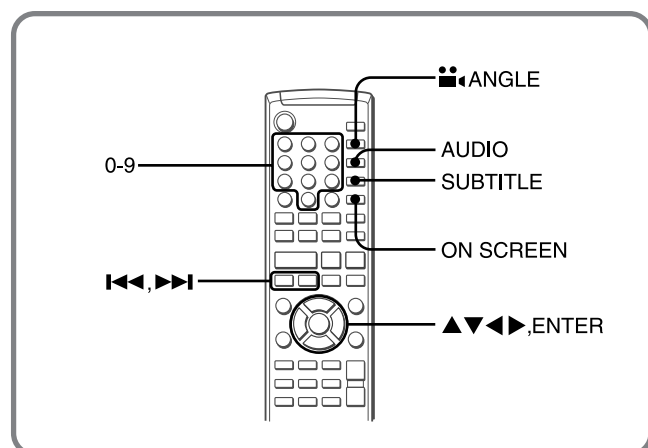
The playback starts.

NOTE

- The contents and operation of the software specific menu vary with the disc. Follow the instructions on the disc and on the menu screen.

ON SCREEN DISPLAY INFORMATION

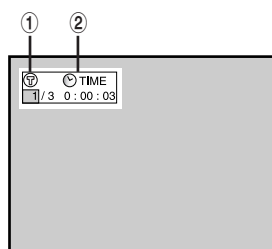
The information of current disc is displayed on the TV screen and you can select title, chapter or audio language etc.





Press ON SCREEN on the remote control during playback.

On screen display information is displayed on the TV screen. When the menu screen is displayed, on screen display information is not displayed.

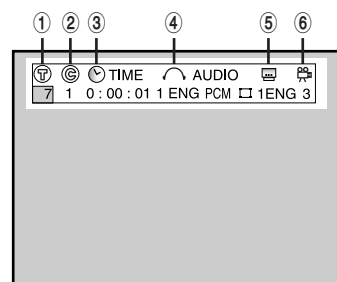
[CD]












- ①  shows the current track/total tracks.
Press **0-9** to select the desired track and press **ENTER**.
- ②  shows the elapsed playing time.

[DVD]

Press ◀ or ▶ to select the desired item.



- ①  shows the title number .
Press **0-9** to select the desired title and then press **ENTER**.
- ②  shows the chapter number .
Press **0-9** to select the desired chapter and then press **ENTER**.
- ③  shows the elapsed playing time.
Press **0-9** to input the desired time and then press **ENTER**.
Example:
To specify 1:17:30 (1 hour 17 minutes 30 seconds), press 1, 1, 7, 3 and 0.
To specify 0:08:07 (8 minutes 7 seconds), press 8, 0 and 7.
- ④  shows the audio sound track language and the audio signal type.
Press **AUDIO** to select the desired audio track.
For the audio signal type information, one of the following will be displayed;
: Dolby Digital signal.
dts: DTS signal.
PCM: Linear PCM signal.
MP: MPEG audio signal.
For the number of audio channel, for example,
 = [Conventional stereo] two front channels (left and right) and no rear channel.
 = [5.1-channel surround] three front channels (left, right and center), two rear channels (left rear and right rear) and LFE (Low Frequency Effects).
- ⑤  shows the subtitle information.
Press **SUBTITLE** to select the desired subtitle language.
- ⑥  shows the angle information.
Press **ANGLE** to select the desired angle.

To clear ON SCREEN DISPLAY

Press **ON SCREEN** again.

To move ON SCREEN DISPLAY up or down

Press ▲ or ▼.

SURROUND PLAYBACK

This unit comes equipped with a built-in Dolby Digital decoder, Dolby Pro Logic decoder and a DTS decoder.


With this unit's built-in Dolby Digital decoder, Dolby Pro Logic decoder, DTS decoder and the speaker system (the center, surround speaker units and the subwoofer supplied in addition to the left and right front speakers), Dolby Digital, Dolby Pro Logic, or DTS sources can be played back in full scale home theater sound.

Dialogs are heard in the front and center sound field, while ambient sounds like cars and crowds are reproduced on all sides of the listener, all in all for an incredibly lifelike audio-visual experience.


Dolby Digital and **DTS** are multichannel system (maximum 5.1 channel) which record audio signals digitally. 5.1 channel means left, center and right front channels, separate left and right surround channels, plus a low-frequency effects (LFE) channel, counted as "0.1" channel.

Dolby Digital and DTS tracks may also come in 1 or 2 channels (monaural or stereo, respectively), or in fact, any number of channels within the limit. (Sources with 3 or more channels will be referred to as *a multichannel source*).

Dolby Digital software is marked with the  logo.

DTS software is marked with the  logo.

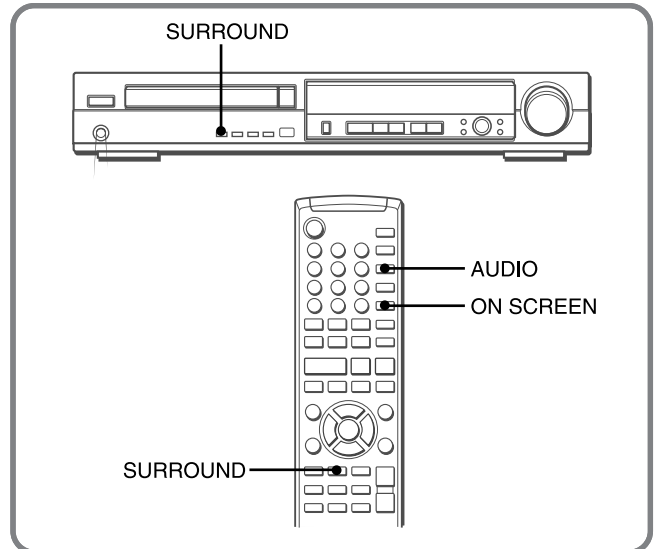
Dolby Pro Logic is an analog audio multichannel system with four independent channels; left, center, right, and surround. These four channels are coded into the two tracks of a conventional analog stereo source.

Dolby Pro Logic VCR software is marked with the  logo.

NOTE

- This unit does not support multichannel playback of MPEG Multichannel sources.
- Make sure all the supplied speakers are placed and connected properly (pages 5 and 6).

PLAYING WITH SURROUND SOUND



1 Play back the surround source.

- Make sure to select the video input from this unit on your TV.
- DVDs may contain several audio tracks, such as a Dolby Digital track and a DTS track, or Dolby Digital tracks in different channel configurations, etc. If necessary, press **AUDIO** on the remote control to change the playback track (page 22).

2 Press SURROUND repeatedly to select the desired surround mode.

With each press:

For a Dolby Digital/DTS multichannel source

DOLBY DIGITAL/DIGITAL THEATER ↔ STEREO

DOLBY DIGITAL/DIGITAL THEATER: multichannel surround sound

STEREO: 2 channel stereo sound (Select this mode when neither the center nor the surround speaker units are connected.)

For a Dolby Digital 2 ch source

PRO LOGIC ↔ STEREO

For a source except stated above

(Linear PCM or ANALOG, etc.)

PRO LOGIC → THEATER → HALL → STADIUM
↑
STEREO ←

PRO LOGIC: Surround sound

THEATER: Sound presence of a theater

HALL: Sound presence of a concert hall

STADIUM: Sound presence of a stadium

STEREO: Normal stereo playback

- The signal type indicator lights up according to the signal type and other conditions (see "SURROUND PLAYBACK MODE INDICATION", page 25).

To adjust the sound level of the speakers during playback
See "ADJUSTING SPEAKER LEVELS", page 28.

NOTE

- When the headphones are plugged in, surround mode automatically switches to the STEREO mode.
- When playing back 96 kHz Linear PCM source, surround mode automatically switches to the STEREO mode.

SURROUND PLAYBACK MODE INDICATION

The “**DIGITAL**”, “**dts**” and “**PRO LOGIC**” indicators show your present playback condition as follows;

“**DIGITAL**” indicator lights up...

when a Dolby Digital source is played back.

“**dts**” indicator lights up...

when a DTS source is played back.

“**PRO LOGIC**” indicator lights up...

when a 2-channel source, such as the following, is played back with PRO LOGIC mode:

- Dolby Pro Logic source (such as a video cassette recorded in Pro Logic played back on a connected VCR player)
- 2-channel Dolby Digital source (DVD etc.,)

If the source does not play in your desired playback mode

Your actual surround playback condition is determined by a number of factors. Check the following;

– type of signal and number of channels on your source

For example, a Dolby Digital or a DTS disc may come in its full 5.1 channels, or in 2 channels, etc. Press ON SCREEN on the remote control to check the audio signal type information.

See “ON SCREEN DISPLAY INFORMATION”, page 23.

– selected track

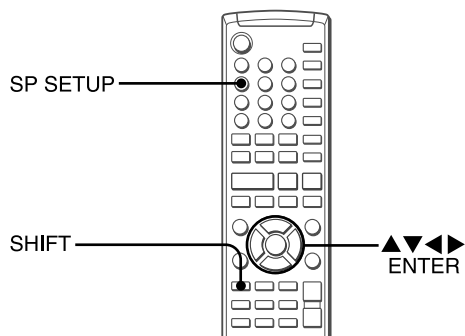
Your disc may offer a choice among several types of sound mixes. Check that your desired mix is selected with the AUDIO button on the remote control.

See “CHANGING AUDIO TRACKS”, page 22.

– type of connection

If you are using analog connection, Dolby Digital or DTS playback is disabled.

SPEAKER SETTING



NOTE

- When the remote control is VIDEO 1, VIDEO 2, TV or CABLE/SAT. mode, press ▲, ▼, ◀ or ▶ with pressing **SHIFT**.

SETTING UP THE SPEAKER SIZE

You can set each speaker size and whether they are present or not.

1 Press **SHIFT+SP SETUP**.

2 Press **▲** or **▼** to select “**SP SIZE**”.

With each press:

SP SIZE ↔ SP DIST ↔ BALANCE ↔ TEST TONE

3 Press **▶**.

4 Press **▲** or **▼** to select the speaker for setting.

With each press:

FRONT ↔ CENTER ↔ SURROUND ↔ SW

5 Press **▶**.

6 Press **▲** or **▼** to select the speaker type.

With each press:

FRONT: F-LARGE ↔ F-SMALL
 CENTER: C-LARGE ↔ C-SMALL ↔ C-NONE
 SURROUND: S-LARGE ↔ S-SMALL ↔ S-NONE
 SW: SW-YES ↔ SW-NO

LARGE: Large speaker . When bass playback is possible. (100 Hz or lower is the target.)

SMALL: Small speaker . When bass playback is not possible.

NONE: When not using the center or the surround speakers.

YES: When using a subwoofer .

NO: When not using a subwoofer .

(Default: F-SMALL, C-SMALL, S-SMALL, SW -YES)

7 Press **▶**.

“ENTER” flashes. Then the selected item is displayed. If you set other speaker, press **▶** to go back to step 4.

When the setting is not changed, the unit goes back to step 4.

8 Press SHIFT+SP SETUP.

The setting is completed.

NOTE

- When "F-SMALL" is selected, "SW -YES" is automatically set and cannot be changed.
- "CENTER" and "SURROUND" cannot be set when STEREO mode is selected. (See "PLAYING WITH SURROUND SOUND", page 24)

ADJUSTING THE SPEAKER DISTANCE

Adjusts the speaker distance so that sounds from each speaker can reach the listening position at the same time.

1 Press SHIFT+SP SETUP.

2 Press ▲ or ▼ to select "SP DIST".

With each press:

SP SIZE ↔ SP DIST ↔ BALANCE ↔ TEST TONE




3 Press ►.

4 Press ▲ or ▼ to select the speaker for setting.

With each press:

FRONT ↔ CENTER ↔ SURROUND



5 Press ►.

6 Press ▲ or ▼ to adjust the distance from each speaker to the listening position.

Default:

FRONT: F 17FT (feet)

CENTER: C 17FT (feet)

SURROUND: S 12FT (feet)

Adjustable range: 1FT to 30FT (for each speaker)

7 Press ►.

The adjusted level is set and back to step 4.

8 Press SHIFT+SP SETUP.

The setting is completed.


ADJUSTING THE LEVEL BALANCE OF THE FRONT SPEAKERS

1 Press SHIFT+SP SETUP.

2 Press ▲ or ▼ to select "BALANCE".

With each press:

SP SIZE ↔ SP DIST ↔ BALANCE ↔ TEST TONE



3 Press ►.

4 Press ▲ or ▼ to adjust the level balance.

Default:

L 0dB (Left front)

R 0dB (Right front)

Press ► to switch the display between "L" and "R".

5 Press SHIFT+SP SETUP.

The setting is completed.

ADJUSTING THE SPEAKER CHANNEL LEVEL


Using a test signal, the sound level of all available channels should be adjusted so that the volume level from each speaker sounds equal.

1 Press SHIFT+SP SETUP.

2 Press ▲ or ▼ to select "TEST TONE".

With each press:


SP SIZE ↔ SP DIST ↔ BALANCE ↔ TEST TONE



3 Press ►.

The test signal automatically cycles through the channels in the following order:

L → C → R → RS → LS



(L: Left front, C: Center, R: Right front, RS: Right Surround, LS: Left Surround)

4 While the desired channel is displayed, press ▲ or ▼ to adjust the channel level.

Adjustable range: -10 to +10(dB)

5 Press SHIFT+SP SETUP.

The setting is completed.

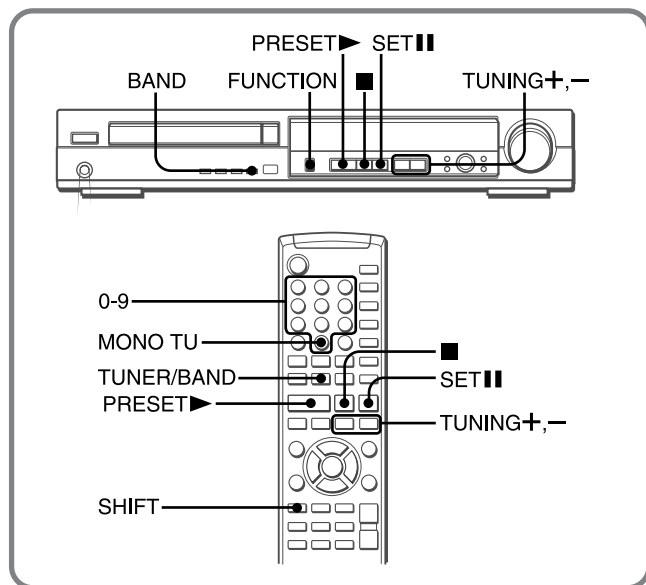
NOTE

- When the volume level is set to 80, any one of speaker channel level cannot be set to more than +1 dB.
- When the surround mode is set to the STEREO mode (page 24), the speaker channel level cannot be adjusted.

RADIO RECEPTION

Your receiver can receive FM and AM radio broadcast.

RADIO RECEPTION



MANUAL TUNING

- 1 Press **FUNCTION** repeatedly to select **TUNER** function.

On the remote control, press **TUNER/BAND**.

- 2 Press **BAND** to select a band.

On the remote control, press **TUNER/BAND**.

- 3 Press **PRESET** ► to display “TUNING”.

- 4 Press **TUNING +** or **—** to select a station.

“TUNE” lights up during radio reception.

“(Ⓜ)” lights up for FM stereo reception.

AUTO SEARCH

- 1 Select a band.

- 2 Press **PRESET** ► to display “TUNING”.

- 3 Hold down **TUNING +** or **—** until the search begins.

The unit starts searching the band, and stops when it tunes in to a station.

To stop auto search manually

Press **TUNING +** or **—**.

NOTE

Auto search may not stop at stations with weak signals.

PRESET TUNING

The unit can store up to 32 preset stations for each band (FM, AM). Presetting allows you to tune in to a station directly. 5 stations are preset with test frequency for each band. (factory setting)

Automatic Presetting

The tuner scans through the receivable frequency range and stores stations automatically.

- 1 Select the band.

- 2 Hold down **SET** ■ for 3 seconds.

The tuner searches for a station.

Stations with weak signals may not be stored.

To stop automatic presetting manually

Press **SET** ■ again.

NOTE

If you use automatic presetting, previously stored stations are overwritten.

Manual Presetting

- 1 Press **PRESET** ► to display “TUNING”.

- 2 Tune in to the desired station.

- 3 Press **SET** ■.

- 4 Within 5 seconds, press **TUNING +** or **—** to select preset number.

- 5 Press **SET** ■ to store the station.

Preset Tuning

On the main unit

- 1 Select the band.

- 2 Press **PRESET** ► to display “PRESET”.

- 3 Press **TUNING +** or **—** to select the preset number.

On the remote control

- 1 Select the band.

- 2 Press **0-9** to enter the preset number.

Example:

To select 21, press, **2**, **1**.

To clear a station preset

- 1 Tune in to the station to be cleared by preset tuning.

The preset will not be cleared if you tuned in to a station by manual tuning.

- 2 Press **■**.

The preset is cleared.

ADJUSTMENTS

ADJUSTING THE ANTENNAS

FM antenna:

Extend fully and position for the best possible reception.
An outdoor antenna is recommended for better reception. See "CONNECTING AN OUTDOOR ANTENNA", page 8.

AM antenna:

Position and rotate the antenna to find the best reception.

Changing FM reception to monaural

Press **SHIFT+MONO TU** on the remote control. "MONO" appears on the display .

Monaural reception will reduce noise if FM stereo reception contains noise.

To return to stereo reception, repeat the above.

If reception contains noise interference

Move the unit away from other electrical appliances, especially digital audio devices, or turn off the appliances that generate noise signals.

Changing the AM tuning interval

The default tuning interval of the receiver is 10 kHz/step. When using the receiver in a 9 kHz/step area, change the tuning interval. Select AM band and hold down **BAND** on the main unit. Repeat to return to 10 kHz/step.

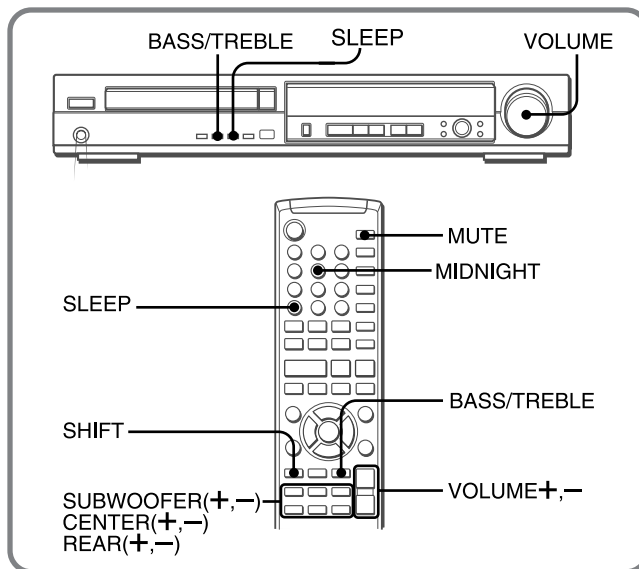
NOTE

Changing the AM tuning interval will return the station presets to the initial setting.

SOUND AND TIMER ADJUSTMENTS

Sound and timer adjustment are possible on this unit.

SOUND ADJUSTMENTS



ADJUSTING SPEAKER LEVELS

First, adjust the speaker levels with a test signal (page 26). After that, if needed, adjust the speaker levels by following way with playing back a software.

Press **SUBWOOFER(+,-)**, **CENTER(+,-)** or **REAR(+,-)** on the remote control to adjust subwoofer, center or surround speakers level.

NOTE

- When the volume level is set to 80, any one of speaker channel level cannot be set to more than +1 dB.

ADJUSTING THE BASS/TREBLE LEVEL

1 Press **BASS/TREBLE** repeatedly to select "BAS" or "TRE".

2 Turn **VOLUME** (press **VOLUME+** or **-** on the remote control) to adjust bass/treble level.

Adjustable range: -10 to +10 (dB)

NOTE

- BASS/TREBLE is only effective for front speakers and headphone.

MUTING SOUND

Press **MUTE** on the remote control.

"MUTE" appears on the display , and sound from the speakers or the headphones is muted.

To cancel muting

Press **MUTE** again.

ADJUSTING DYNAMIC RANGE (DOLBY DIGITAL)

In Dolby Digital, dynamic range between soft and loud sounds can be adjusted to suit your desired playback volume.

1 Play the Dolby Digital sound.

See "PLA YING WITH SURROUND SOUND", page 24.

2 Press **SHIFT+MIDNIGHT** repeatedly to select desired mode.

[NIGHT MIN]

Minimum dynamic range compression. Enjoy the full dynamic range of the sound track as experienced in a movie theater

[NIGHT STD]

Standard dynamic range compression recommended by the software producers when playing back at home. Default.

[NIGHT MAX]

Maximum dynamic range compression. Keeps soft sounds and dialogs intelligible even with the overall volume turned down. Select this mode when you have to keep the volume low, for example, when playing back late at night.

SLEEP TIMER

This unit can be set to turn off automatically after a specified period of time.

Press **SLEEP** repeatedly to set the sleep timer duration.

On the remote control, press **SHIFT+SLEEP**.

The sleep-time can be changed from 10 to 90 minutes in 10-minute steps.

To check the time remaining until the power turns off

Press **SLEEP** once (press **SHIFT+SLEEP** on the remote control). The remaining time is displayed for 4 seconds.

To cancel the sleep timer

Press **SLEEP** (press **SHIFT+SLEEP** on the remote control) repeatedly to clear the sleep-timer display.

CUSTOMIZING DVD SETUP

Various default settings related to the DVD player and the TV monitor can be changed as needed or preferred.

OVERVIEW OF THE SETUP MENU

There are 4 major menu items that can be adjusted. Their function are as follows:

1 **RATING** (page 30)

Sets the rating limit of DVDs allowed to play back on this unit when playing discs with restriction level encoding.

With discs that include scenes with excessive violence, for example, this setting can be used either to automatically cut such scenes or to disable playback altogether, depending on the disc.

2 **PASSWORD** (page 30)

The password needs to be entered not to prevent the playback of the disc whose rating level is higher than the unit's setting. The password can be changed to your taste.

When the password is required, even if you input the wrong password, the password cannot be cleared. Be careful not to input the wrong password. If you fail in inputting password, reinsert the disc and then repeat the procedure.

3 **TV DISPLAY** (page 31)

Sets the aspect ratio of the video signal sent to your connected TV set. The preference setting for the 4:3 or 16:9 representation of wide format software is only effective when playing a disc offering such a choice.

4 **TV TYPE** (page 31)

Sets "TV TYPE" according to the color system of the connected TV.

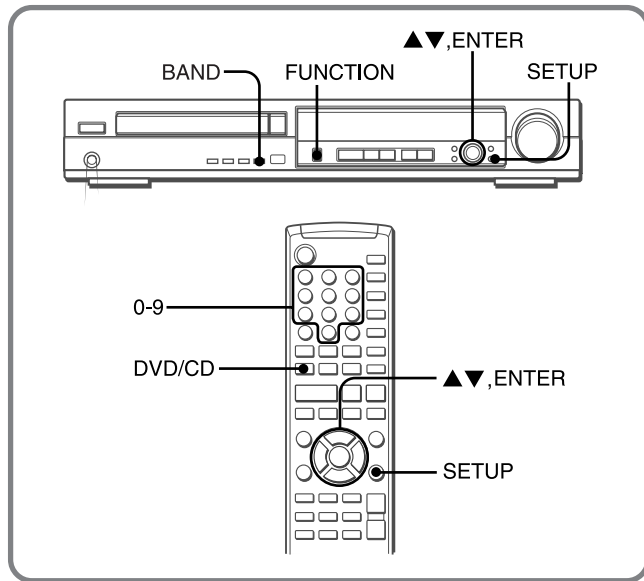
The "TV DISPLAY" setting and the "TV TYPE" setting need to be set specifically to match your configuration of connected equipment.

- The default "TV DISPLAY" setting has to be changed if you are connecting to a 16:9 (wide) ratio TV set.
- Changing the default "TV TYPE" may be needed depending on your TV type.

Any other setting can be changed or kept as is, according to your preferences.

BASIC MENU OPERATIONS

Basic operation of the **SETUP** MENU is described here.

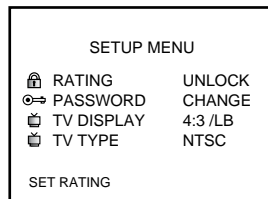


1 Select DVD/CD function.

Press **FUNCTION** repeatedly on the main unit or press **DVD/CD** on the remote control.

2 Press **SETUP**.

The "SETUP MENU" screen is displayed.



3 Press **▲** or **▼** to select the item to be changed.

4 Press **ENTER** to select the desired setting.

5 Press **SETUP**.

To exit the setup menu

Press **SETUP**.

To confirm your setting

- 1 Press **SETUP** to display the setup menu.
- 2 Press **SETUP** again to exit the setup menu without making changes.

NOTE

- While the setup screen is displayed, you will not be able to perform other operations on the unit. Press **SETUP** again to exit the setup screen first.

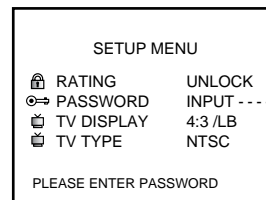
RATING

Sets the rating limit allowed to playback on this unit when playing discs with restriction level encoding. To change the restriction level, you have to input the password. The default setting is "UNLOCK".

1 Select "RATING" in the "SETUP MENU".

2 Press **ENTER**.

3 Use 0-9 to input password. default: 1234



4 Press **ENTER**.

5 Press **ENTER** repeatedly to select your desired level.

"UNLOCK" cancels the rating level.

The smaller the number, the higher the level of restriction.

For instance, setting the rating level to 1 will restrict playback of all discs with a rating level from 2 to 8, either by cutting certain scenes or disabling playback altogether, depending on the disc.

Check your disc for details.

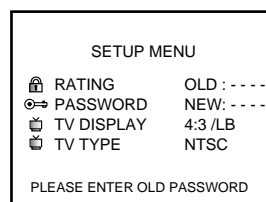
6 Press **SETUP**.

The setting is completed.

PASSWORD

The password needs to be entered not to prevent the playback of the disc whose rating level is higher than the unit's setting. The password can be changed to your taste.

1 Select "PASSWORD" in the "SETUP MENU" and press **ENTER**.



2 Use 0-9 to input four-digit old password. default: 1234

3 Use 0-9 to input four-digit new password. *Do not forget the password you set!*

4 Press **ENTER**.

5 Press **SETUP**.

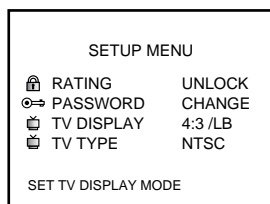
The setting is completed.

If you forget your password (Resetting the DVD setup)

- 1 Press **SETUP** to display **SETUP MENU**.
- 2 Select "RATING" in the "SETUP MENU" and press **ENTER**.
- 3 Input four-digit number "2580" and press **ENTER**.
All the item of the DVD setup are reset.

TV DISPLAY

Sets the aspect ratio of the video signal sent to your connected TV set.



The default setting is "4:3 /LB (letterbox)".

If you are connecting to a 16:9 (wide) ratio TV set, change the setting to "16:9 WIDE".

- 1 Select "TV DISPLAY" in the "SETUP MENU".
- 2 Press ENTER repeatedly to select the desired setting.

"4:3/LB (Letter Box)"

Media recorded in wide (16:9) format will be played in "letterbox" style, with black bands at the top and bottom of the screen.



"4:3/PS (Pan & Scan)"

Media recorded in wide (16:9) format will be played at the full screen height, with the left and right portions cut off.



"16:9 WIDE"

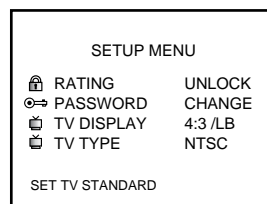
Select this when a wide-screen TV is connected. Media recorded in wide (16:9) format can be played on the full screen. (The wide-screen TV also needs to be set to wide-screen.)



- 3 Press SETUP.
The setting is completed.

TV TYPE

Set "TV TYPE" according to the color system of the connected TV.



- 1 Select "TV TYPE" in the "SETUP MENU".
- 2 Press ENTER to select the desired setting.

"NTSC"

When connecting to a NTSC system TV. (Default)

"PAL"

When connecting to a PAL system TV.

"MULTI"

When connecting to a multi color system TV.

- 3 Press SETUP.

When the SETUP MENU screen is not displayed properly.

1. Press SETUP to exit the SETUP MENU
2. Hold down BAND repeatedly until NTSC, PAL or MULTI is displayed on the TV screen. The setting with BAND button is temporary. If the disc is removed or the function is changed, the setting is canceled. When you change the setting with BAND button, the setting of the SETUP MENU also needs to be changed.

NOTE

- If the color is abnormal or the picture is distorted in MULTI mode, switch to NTSC or PAL.
- If the disc of the NTSC (PAL) color system is played in PAL (NTSC) setting, sometimes the picture is distorted. This is because of the difference between the PAL and the NTSC format.

CARE AND MAINTENANCE

HANDLING THE UNITS

When shipping the unit

The original shipping carton and packing materials come in handy. For maximum protection, re-pack the units as it was originally packed at the factory.

When setting the unit

The picture and sound of a nearby TV, VCR or radio may be distorted during DVD playback. In this case, position the unit away from the TV, radio or VCR.

To keep the surface clean

Do not use volatile liquids, such as insecticide spray, near the units. Do not leave rubber or plastic products in contact with the units for a long period of time. They will leave marks on the surface.

HANDLING DISCS

Do not touch the playback side of the disc. Hold the disc by the edges so that fingerprints will not get on the surface. Do not stick paper or tape on the disc.

CLEANING THE UNITS

To clean the cabinet

Use a soft, dry cloth. If the surfaces are extremely dirty, use a soft cloth lightly moistened with a mild detergent solution. Do not use strong solvents, such as alcohol, benzene or thinner, as these might damage the surface of the units.

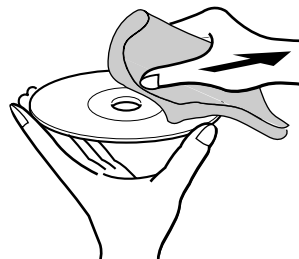
To obtain a clear picture

The DVD player is a high-tech, precision device. If the optical pick-up lens and disc drive parts are dirty or worn down, the picture quality will be poor. Regular inspection and maintenance are recommended after every 1,000 hours of use. (This depends on the operating environment.)

For details, please contact your Aiwa dealer.

CLEANING DISCS

Fingerprints and dust on the disc can cause poor picture quality and sound distortion. Before playing, clean the disc with a clean cloth. Wipe the disc from the center out.



Do not use strong solvents such as alcohol, benzene, thinner, commercially available cleaners or anti-static spray intended for analog records.

STORING DISCS

After playing, store the disc in its case.

Do not expose the disc to direct sunlight or sources of heat, or leave it in a parked car exposed to direct sunlight, as there may be a considerable temperature increase inside the car.

TROUBLESHOOTING GUIDE

If the unit fails to perform as described in these Operating Instructions, check the following guide.

RECEIVER

GENERAL

There is no sound.

- Is the AC cord connected properly?
- Is there a bad connection? (→ pages 5 and 6)
- There may be a short circuit in the speaker terminals.
→ Disconnect the AC cord, then correct the speaker connections.
- Was an incorrect function selected?
- Was the MUTE button pressed?

Sound is not heard from either of the front speakers.

- Is the speaker level adjusted properly?

There is no sound from the center and the surround speakers when playing Dolby Digital, DTS or Dolby Pro Logic sound.

- Is the surround mode appropriate for your speaker configuration selected? (→ page 24)

An erroneous display or a malfunction occurs.

→ Reset the unit as stated below.

The power cannot be turned on.

→ Disconnect the AC cord, and connect it again in a few seconds.

The remote control does not work.

→ Press the source button (VIDEO 1, VIDEO 2, TV, DVD/CD, TUNER/BAND, CABLE/SAT.) to confirm the remote control mode. (→ page 10)

TUNER SECTION

There is constant, wave-like static.

- Is the antenna connected properly? (→ page 6)
- Is the signal weak?
→ Connect an outdoor antenna.

The reception contains noise interferences or the sound is distorted.

- Is the system picking up external noise or multipath distortion?
→ Change the orientation of the antenna.
→ Move the unit away from other electrical appliances.

DISC PLAYER

The disc does not play.

- Check your connection.
- Is the disc correctly placed? (→ page 15)
- Is the disc dirty? (→ page 32)
- Is the lens affected by condensation?
→ Wait approximately one hour and try again.
- Are you trying to use a disc that can't be played, such as a CD-ROM? (→ page 13)
- [DVD only] Does the disc exceed the specified rating level? (→ page 30)
- [DVD only] Is the unit connected through a video deck, through a selector switch, or to a TV set with a built-in video deck?
→ The picture may be bad when used with some television sets or projectors, due to the DVD copy protection scheme.
The picture quality may also suffer if the DVD player is connected through a selector switch with other video equipment. Try turning off the power to the other video equipment.
- The picture quality may be somewhat poor when paused, during Frame Advance, fast forward or fast reverse. This is normal.
- Check the color system setting. (→ page 31)

The DVD does not play according to your preferences.

- Check your setup. (→ page 29)
- Many DVD features, such as the menu, subtitles, multi-audio, multi-angle, rating functions, are dependent on the DVD software itself. Check the instructions for your disc.

When connecting the TV for the first time, no picture appears on the TV screen.

- Check the color system setting. (→ page 31)

RESETTING THE UNIT

If an unusual condition occurs in the display window, reset the unit as follows.

Hold down ■ for 4 seconds.

Everything(except for the DVD setup) stored in the unit's memory after purchase is canceled.

For resetting the DVD setup, see "If you forget your password", page 30.

SPECIFICATIONS

Main unit HT-DV90

FM tuner section

Tuning range 87.5 MHz to 108 MHz

Usable sensitivity (IHF)

16.2 dBf

Antenna jack 75 ohms (unbalanced)

AM tuner section

Tuning range 520 kHz to 1720 kHz (10 kHz step)

531 kHz to 1629 kHz (9 kHz step)

Usable sensitivity 700 µV/m

Antenna Loop antenna

Amplifier section

Power output

Front

Rated: 38 W + 38 W (40 Hz - 20 kHz, T.H.D. less than 1 %, 6 ohms)

Reference: 50 W + 50 W (40 Hz - 20 kHz, T.H.D. less than 10 %, 6 ohms)

Setting range: 1FT to 30FT (feet)

Rear (Surround)

Rated: 38 W + 38 W (40 Hz - 20 kHz, T.H.D. less than 1 %, 6 ohms)

Reference: 50 W + 50 W (40 Hz - 20 kHz, T.H.D. less than 10 %, 6 ohms)

Setting range: 1FT to 30FT (feet)

Center

Rated: 38 W (40 Hz - 20 kHz, T.H.D. less than 1 %, 6 ohms)

Reference: 50 W (40 Hz - 20 kHz, T.H.D. less than 10 %, 6 ohms)

Setting range: 1FT to 30FT (feet)

Subwoofer

Rated: 38 W (40 - 200 Hz, T.H.D. less than 1 %, 6 ohms)

Reference: 50 W (40 - 200 Hz, T.H.D. less than 10 %, 6 ohms)

Total harmonic distortion

0.2 % (10 W, 1 kHz, 6 ohms, DIN AUDIO, Front)

Input/output

Input

AUDIO VIDEO 1 IN, AUDIO VIDEO 2 IN: 370 mV (47 kohms)

OPTICAL IN VIDEO 1, OPTICAL IN VIDEO 2: accept linear PCM signals and Dolby Digital and DTS surround bitstream (32 kHz, 44.1 kHz, 48 kHz, and 96 kHz)

VIDEO VIDEO 1 IN, VIDEO VIDEO 2 IN: 1 Vp-p (75 ohms, unbalanced)

AUDIO VIDEO 1 OUT: 350 mV (47 kohms)

OPTICAL OUT

VIDEO VIDEO 1 OUT, VIDEO OUT:

1 Vp-p (75 ohms, unbalanced)

S-VIDEO OUT

Y output: 1 Vp-p (75 ohms)

C output: 0.286 Vp-p

FRONT SPEAKERS: accept speakers of 6 ohms

SURROUND SPEAKERS: accept speakers of 6 ohms

CENTER SPEAKER: accepts speakers of 6 ohms

SUB WOOFER terminal: 6 ohms

SUB WOOFER jack: 1 V

PHONES (mini jack): accepts headphones of 32 ohms or more

General

Power requirements 120V AC, 60 Hz

Power consumption 85 W

Power consumption in standby mode 4 W

Dimensions (W x H x D) 430 x 70 x 311 mm (17 x 2⁷/₈ x 12¹/₄ in.)

Weight 4.3 kg (9 lbs 8 oz)

Disc player section

COLOR system NTSC/MULTI/PAL (Switchable)

Supported discs **DVD video discs**

12 cm (single-sided single-layer, single-sided double-layer, double-sided-double layer)

8 cm (single-sided single-layer, single-sided double-layer, double-sided-double layer)

Compact discs (CD-DA, CD-R/RW)

12 cm and 8 cm discs

Audio output characteristics

Frequency range: 20 Hz to 20 kHz

Operating conditions 5°C to 35°C (41°F to 95°F)

Speaker system

Speakers

Front, Surround, Center: full range, 100 mm (4 in.) bass reflex type

Subwoofer: 200 mm (7⁷/₈ in.), bass reflex type

Impedance

6 ohms

Maximum input power

55 W (peak)

Dimensions (W x H x D)

SX-F90 (Front): 115 x 153 x 138 mm (4⁵/₈ x 6¹/₈ x 5¹/₂ in.)

SX-R90 (Surround): 115 x 153 x 138 mm (4⁵/₈ x 6¹/₈ x 5¹/₂ in.)

SX-C90 (Center): 153 x 115 x 138 mm (6¹/₈ x 4⁵/₈ x 5¹/₂ in.)

TS-W90 (Subwoofer): 180 x 335 x 390 mm (7¹/₈ x 13¹/₄ x 15³/₈ in.)

Weight

SX-F90 (Front): 1 kg (2 lbs 3 oz)

SX-R90 (Surround): 0.8 kg (1 lbs 12 oz)

SX-C90 (Center): 1 kg (2 lbs 3 oz)

TS-W90 (Subwoofer): 4.9 kg (10 lbs 13 oz)

Specifications and external appearance are subject to change without notice.

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BRAND CODES/CÓDIGOS DE MARCAS/CODES DE MARQUE

TV brand code/Código de marca de televisor/Codes de marque de televeiseur

Brand Marca Marque	Code Código Code		271	FUNAI	138		279
		CXC	138		146	IMA	138
ABEX	272	DAEWOO	104	FUTURETEC	138	INFINITY	162
ADMIRAL	101		105	GE	103	JBL	162
AIWA	100		106		104	JC PENNY	104
AKAI	102		117		106		105
ALLERON	146		118		110		106
AMTRON	138		271		119		108
ANAM	111	DAYTRON	104		121		122
	145		106		122		152
	153		271		152		154
	291	DIMENSIA	185		154		158
ANAM NATIONAL	103	DUMONT	104		155		163
	138	ELECTROBAND	102		185		172
AOC	104	ELECTROHOME	103		187		185
	105		104		200		187
	106		106		221		205
	107		119		230		228
AUDIOVOX	138		122		264		271
BELCOR	104	EMERSON	104		265		272
BELL & HOWELL	101		106	GIBRALTER	104	JCB	102
	262		112			JENSEN	104
BRADFORD	138		124	GRUNDY	138		106
BROKWOOD	104		125		146	JVC	112
CANDLE	104		126	HALLMARK	271		113
	106		127		104		154
	108		128		106		156
CELEBRITY	102		129	HARVARD	138		160
CITIZEN	104		130	HITACHI	104		165
	106		131		106		166
	108		132		110		167
	138		134		112		189
	205		135		113		257
	271		136		119		258
COLORTYPE	104		138		140		259
	106		139		159	KAWASHO	102
CONCERTO	104		141		160		104
	106		142		214		106
CONTEC/CONY	112		146		235	KENWOOD	104
	113		262		236		106
	138		271		237		119
CRAIG	138		279		238	KLOSS NOVABEAM	169
CROWN	138	ENVISION	104		239		283
	271		106		240	KTV	138
CURTIS MATHES	104	FISHER	148		242		271
	106		149		243	LG (GOLDSTAR)	104
	115		151		244		105
	185		262		245		106
	205		280		246		112
	262	FUJITSU	146		248		

	119		122		162		272
	156		151		169	RCA	103
	158		179		174		104
	255		180		175		105
	256		182		177		106
	271	MIDLAND	154		283		107
	272		271		284		110
LOEWE	162		272	PHILIPS	103		119
LUXMAN	104		281		104		120
	106	MINUTZ	152		108		121
LXI	106	MITSUBISHI	104		112		135
	149		105		119		156
	162		106		162		185
	172		119		169		198
	185		122		174		199
	262		151		175		200
	281		179		176		201
MAGNAVOX	104		180		186		202
	106		181		187		210
	108		182		188		221
	119		210		189		279
	162		221		230		281
	169		225	PILOT	104		287
	174	MOTOROLA	103		271		290
	175	MTC	104	PIONEER	104	SAMPO	104
	176		105		106		106
	177		106		190		271
	188		205		191		272
	189	MULTITECH	138		192	SAMSUNG	104
	226	MULTIVISION	184		279		105
	230	NAD	106	PORTLAND	104		106
	231		172		105		112
	232	NEC	103		106		115
	233		104		271		119
	234		105	PRICE CLUB	205		204
	254		106	PRISM	154		205
	283		189	PROSCAN	185		206
	284	NIKKO	106		281		271
MARANTS	162	ONWA	138	PROTON	104		272
MARANTZ	104	ORION	135		106	SAMSUX	271
	106	PANASONIC	103		112	SANYO	104
	162		154	PULSER	104		109
MEGATRON	106		162	QUASAR	103		148
	159		230		154		149
MEMOREX	101		270	RADIO SHACK/ REALISTIC	104		180
	106	PHILCO	103		106		207
	182		104		112		208
	262		105		138		210
MGA	104		106		149		262
	105		108		185		280
	106		112		262	SCOTCH	106
	119		119		271	SCOTT	104

TV brand code/Código de marca de televisor/Codes de marque de televeiseur

	106		175		146
	112		176		152
	124		177		162
	135		188		169
	138		283		174
	146		284		175
SEARS	104	SYMPHONIC	138		176
	106	TATUNG	103		185
	113	TECHNICS	154		187
	119	TECHWOOD	104		188
	146		106		219
	148		154		220
	149	TEKNIKA	104		284
	151		105	YAMAHA	104
	166		106		105
	172		108		106
	185		112		119
	209		113	ZENITH	104
	210		138		247
	262		146		253
	280		176		254
	281		182		
SHARP	104		205		
	106		270		
	112		271		
	129	TELECATION	217		
	211	TMK	104		
	212		106		
	213	TOTEVISION	271		
	221	TOSHIBA	149		
	222		172		
	271		189		
			205		
			209		
			210		
SHOGUN	104		217		
SIGNATURE	101		218		
SIMPSON	108		221		
SONY	102		260		
SOUNDESIGN	104		262		
	106				
	108				
	138				
	146	UNIVERSAL	152		
SSS	104		187		
	138	VICTOR	166		
STARLITE	138	VIDTECH	104		
SUPREME	102		105		
SYLVANIA	104		106		
	106	WARDS	101		
	108		104		
	119		105		
	162		106		
	169		107		
	174		124		

VCR brand code/Código de marca de videgrabadora/Codes de marque de magnétoscope

Brand Marca	Code Código Code	DAEWOO	415		515		418
			417		520		458
ADMIRAL	531		426	GRADIENTE	426		511
ADVENTURA	426		428	HARLEY DAVIDSON	426		523
AIWA	400	DBX	409	HARMAN KARDON	409	KLH	461
	426		410	HARWOOD	461	KODAK	414
	533	DIMENSIA	412	HEADQUARTER	411		421
AKAI	403	DYNATECH	426	HI-Q	423	LG (GOLDSTAR)	409
	404	ELECTROHOME	414	HITACHI	421		414
	512		429		455		418
	513	ELECTROPHONIC	414		456		454
AMERICAN HIGH	421	EMERSON	414		457		506
ANAM	400		415		489	LLOYD	426
	402		421		497	LOGIK	461
	408		426		507	LXI	414
	532		429		511	MAGNAVOX	421
ASHA	413		430		520		449
AUDIO DYNAMICS	409		432		522		462
	410		433	INSTANT REPLAY	421		463
AUDIOVOX	414		435	JC PENNEY	409		504
BEAUMARK	413		436		410		508
BELL & HOWELL	411		437		411		524
CALIX	414		438		413	MAGNIN	413
CANDLE	413		439		414	MARANTZ	409
	414		440		421		410
	415		441		455		411
	416		442		456		416
	417		444		458		418
	418		445		459		421
CANON	421		465		460		458
CARVER	462		513		507		462
CCE	461		516		518	MARTA	414
CITIZEN	413		517	JCI	421	MATSUSHITA	421
	414		530	JENSEN	455	MEI	421
	415	FISHER	405		456	MEMOREX	411
	416		411		511		413
	417		419	JVC	409		414
	418		423		410		421
COLORTYME	409		448		411		423
COLT	461		449		418		426
CRAIG	413		450		420		504
	414		451		421		531
	423		518		458	MGA	429
	461	FUJI	421		462		465
			519		468		513
CURTIS-MATHES	409				477	MGN TECHNOLOGY	413
	412	FUNAI	426		511	MIDLAND	453
	413	GARRARD	426		523	MINOLTA	455
	416	GE	401				456
	418		412	KENWOOD	409		507
	421		413		410		
	515		421		411	MITSUBISHI	406
CYBERNEX	413		453		416		407

VCR brand code/Código de marca de videograbadora/Codes de marque de magnétoscope

	419		526		446		451
	421		527		448		455
	424	PENTAX	416		453		456
	429		455		454		507
	455		456		455		518
	456		507		456	SHARP	417
	465		520		462		429
	466	PENTEX RESEARCH	418		482		431
	467	PHILCO	421		483		494
	469		462		484		495
	470		463		486		496
	471	PHILIPS	421		487		531
	472		462		488	SHINTOM	404
	473		496		489		456
	474		524		490		461
	506	PILOT	414		491		498
	513	PIONEER	410		494	SHOGUN	413
	523		443		507	SIGNATURE	531
MONTGOMERY WARD	531		455		509	SINGER	421
MOTOROLA	421		480		515		461
	531		481		520		528
MTC	413		523		525	SONY	404
	426	PORTLAND	416		531		421
MULTITECH	413		417	RICHO	528		425
	416	PROSCAN	401	RUNCO	504		427
	426		412	SAMSUNG	413		434
	453	PROTEC	461		415		498
	461	PULSAR	504		433		499
NEC	409	QUARTER	411		453		519
	410	QUARTZ	411	SANKY	504		528
	411	QUASAR	421		531	STS	421
	416		525	SANSUI	410		507
	418	RADIOSHACK/ REALISTIC	411		511	SYLVANIA	421
	458		413		523		426
	511		414	SANYO	405		462
	523		421		411		463
NIKKO	414		423		413		465
NOBLEX	413		426		423		524
OLYMPUS	421		429	SCOTT	415	SYMPHONIC	426
OPTIMUS	414		449		432	TANDY	411
	421		450		435	TASHIKO	414
	431		496		438	TATUNG	458
	446		531		465		511
	494	RADIX	414		493	TEAC	426
	509	RANDEX	414		516		458
	531	RCA	401	SEARS	401		511
OPTONICA	496		403		414	TECHNICS	421
ORION	435		412		421		409
PANASONIC	421		413		423	TEKNIKA	414
	446		415		448		421
	509		421		449		426
	525		431		450	TMK	413

TOSHIBA	415	ZENITH	404
	449		498
	451		504
	455		519
	465		528
	493		
	506		
	516		
TOTEVISION	413		
	414		
UNITECH	413		
VECTOR RESEARCH	409		
	410		
	415		
	416		
VICTOR	410		
VIDEO CONCEPTS	409		
	410		
	415		
	416		
	513		
VIDEOSONIC	413		
WARDS	413		
	414		
	415		
	421		
	423		
	426		
	429		
	455		
	456		
	461		
	496		
	501		
	502		
	503		
	507		
	516		
	531		
XR-1000	421		
	426		
	461		
YAMAHA	409		
	410		
	411		
	418		
	458		
	511		

CABLE brand code/Código de marca de TV por cable/Code de marque de décodeur de télévision par câble

Brand Marca Marque	Code Código Code		746
ABC	702		753
	703		782
	704		783
	705		784
	706		785
	709		788
	753		789
AIWA	700		790
	794		791
ANAM	793	LG (GOLDSTAR)	792
ANTRONIX	708		770
	709		771
ARCHER	708		779
	709		780
	710	MAGNAVOX	725
	711	MEMOREX	726
CABLETENNA	708	MOVIE TIME	702
CABLEVIEW	708		727
CENTURY	711	NSC	728
CITIZEN	711		702
COLOUR VOICE	712		727
COMTRONICS	713	OAK	728
	714		702
	715		716
CONTEC	716	PANASONIC	729
EASTERN	717		748
GARRARD	711	PARAGON	752
GC ELECTRONICS	709	PHILIPS	726
GEMINI	718		711
	719		712
	749		713
GENERAL INSTRUMENT	703		714
GRADIENT	781		725
HAMLIN	720		730
	721		731
	722		732
	735	PIONEER	701
	745		733
HITACHI	703		734
HYTEX	702	PULSAR	742
JASCO	711		726
JERROLD	703	RADIOSHACK	770
	705		771
	707		779
	714	RCA	780
	718		747
	723		749
	724		752
		REALISTIC	709

CABLE brand code/Código de marca de TV por cable/Code de marque de décodeur de télévision par câble

	749	ZENITH	726
REGAL	722		750
	735		751
REGENCY	717		774
REMBRANDT	703		777
RUNCO	726		
S.A	737		
	738		
	786		
	787		
SAMSUNG	714		
	734		
SCIENTIFIC ATLANTA	706		
	736		
	737		
	738		
SIGNAL	714		
	718		
SIGNATURE	703		
SL MARX	714		
SPRUCER	752		
STARCOM	707		
	718		
	753		
STARGATE	714		
	718		
STARQUEST	718		
TANDY	740		
TELEVIEW	714		
TOCOM	704		
	723		
	741		
TOSHIBA	726		
TUSA	718		
TV86	727		
UNIKA	708		
	709		
	711		
UNITED ARTISTS	702		
UNITED CABLE	753		
UNIVERSAL	708		
	709		
	710		
	711		
VIDEOWAY	744		
VIEWSTAR	715		
	725		
	727		
	740		

SAT brand code/Código de marca de TV por satélite/Code de marque de décodeur de télévision par satellite

Brand Marca Marque	Code Código Code
CHAPPARAL	756
	757
DRAKE	758
	759
ECHOSTAR	743
GE	778
GENERAL INSTRUMENTS	760
	761
	762
PANASONIC	757
PIONEER	739
PRIMESTAR DBS	776
PROSCAN	778
RCA	754
	755
	778
REALISTIC	763
SONY	772
STS1	764
STS2	765
STS3	766
STS4	767
TOSHIBA	768
UNIDEN	769

NOTE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION

Modifications or adjustments to this product, which are not expressly approved by the manufacturer, may void the user's right or authority to operate this product.

CAUTION

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

This Class B digital apparatus complies with Canadian ICES-003.

REMARQUE

Cet appareil a été testé et jugé conforme aux normes des appareils numériques de Classe B, conformément au chapitre 15 du règlement FCC. Ces normes sont conçues pour assurer une protection raisonnable contre les interférences radioélectriques lorsque l'appareil est utilisé dans un environnement résidentiel.

Cet appareil génère, utilise et peut émettre des radiofréquences et, s'il n'est pas installé et utilisé conformément au mode d'emploi, il peut provoquer des interférences dans les communications radio. Il n'est cependant pas possible de garantir que des interférences ne se produiront pas dans une installation privée.

Si cet appareil génère des interférences néfastes dans la réception des ondes radio ou télévisées, ce que l'on peut facilement contrôler en mettant l'appareil successivement sous et hors tension, l'utilisateur est invité à tenter de remédier aux interférences en appliquant l'une des mesures suivantes:

- Réorientez l'antenne de réception ou installez-la à un autre endroit.
- Eloignez davantage l'appareil du récepteur.
- Branchez l'appareil sur une prise secteur raccordée à un circuit d'alimentation différent de la prise sur laquelle le récepteur est branché.
- Consultez votre revendeur ou faites appel à un technicien radio/TV.

ATTENTION

Toute modification ou tout réglage de cet appareil non expressément approuvé par le fabricant peut invalider le droit de l'utilisateur à employer cet appareil.

ATTENTION

POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.